

County Borough of Northampton.

REPORT

ON THE

HEALTH

AND

SANITARY CIRCUMSTANCES

OF THE

County Borough of Northampton

For the Year 1908,

BY

J. DOIG McCRINDLE,

MEDICAL OFFICER OF HEALTH.

NORTHAMPTON :

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1909.

*To the Mayor, the Aldermen, and the Councillors of the
County Borough of Northampton.*

GENTLEMEN,

I herewith present to you my Annual Report on the Health and Sanitary Circumstances of the Borough of Northampton, for the 53 weeks ended January 2nd, 1909.

The year's records for 1908 show that for a manufacturing town of this size the health of Northampton is, on the whole, very good. There is a slight improvement in the birth-rate, which, however, is considerably lower than that of the country in general.

The death-rate is the lowest but one recorded. The Infant Mortality, which has been showing an almost continuous decline for the last 10 years, has dropped to a figure which, if maintained, should be a source of considerable satisfaction. The phthisis death-rate, though still too high, is the lowest recorded, except those of the years 1905 and 1906. Most of the other death-rates are below the corresponding figures for the whole of the country, in spite of the fact that the town was suffering from a somewhat widespread epidemic of scarlatina.

There have been some changes in the personnel of the staff during the year. In July the Public Analyst (Sir Thomas Stevenson) died suddenly in the midst of his work. Sir Thomas Stevenson was an eminent and highly-esteemed member of his profession, whose fame in his particular branch was world-wide, and lent to his official work a weight difficult to equal and impossible to surpass. In December, Mr. R. Bodmer, a former assistant of Sir Thomas Stevenson, was appointed as Public Analyst, and his appointment has since the beginning of the present year been duly sanctioned by the Local Government Board. In July, Mr. James Mair, M.B., D.P.H., was appointed Assistant Medical Officer of Health, chiefly for the purpose of carrying out the terms of the Education (Administrative Provisions) Act, 1907, but also to assist generally in the work of the Health Department when not so engaged, and to act as Deputy Medical Officer of Health during my absence. In June, Miss Gough, late Health Visitor, left to take up other duties elsewhere; and Miss Henry, one of the Queen's Nurses already working in the town, was appointed to the post of Health Visitor. Miss Gough was an able and willing worker, much esteemed by her colleagues, and one of the most efficient members of the staff.

In other respects the work of the Department has been carried on as in former years, and I take this opportunity of acknowledging the loyal and willing help given me by the Chief and the other Inspectors, and by the Staff of the Department generally, as well as by the Matron of the Borough Hospital and her Staff.

My thanks are also due to the Chairman and Members of Committee and Council, and to the Officials, for their kindly co-operation and assistance when required.

I am, Gentlemen, your obedient servant,

J. DOIG McCRINDLE.

Health Office, Northampton,

April 17th, 1909.

CHIEF FIGURES, 1908.

ESTIMATED POPULATION	...	...	...	...	...	...	93,760
AREA IN ACRES	...	...	...	...	...	...	3,469
INHABITED HOUSES (census 1901)	...	...	...	...	...	...	17,609
DENSITY OF POPULATION (census 1901)	...	25.36 persons per acre.					4.94 persons per house.
RATEABLE VALUE	...	...	...	...	...	...	£371,120

BIRTHS.

MALES.	FEMALES.	TOTAL.	BIRTH-RATE.
1075	968	2043	21.78

DEATHS.

MALES.	FEMALES.	TOTAL.	DEATH-RATE.
577	554	1131	12.06

Zymotic Death-rate	...	...	...	...	...	...	0.78
Infant Mortality...	...	...	...	...	...	...	96.9
Death-rate from Pulmonary Phthisis	...	...	...	...	...	...	1.1
Death-rate from other Tuberculous Diseases	...	...	...	...	...	...	0.24

DEATHS IN EACH QUARTER.

	1903	1904	1905	1906	1907	1908
First Quarter	312	307	337	262	353	326
Second Quarter	299	258	271	271	284	286
Third Quarter	264	302	237	280	215	236
Fourth Quarter	344	318	314	248	299	283
	1219	1185	1159	1061	1151	1131

POPULATION.

The correct estimation of the population each year is perhaps the most important factor in gauging the health of a community. As the actual enumeration only takes place once in every ten years—at the census—the yearly population can only be got at by a somewhat intricate method of calculation. The Registrar General, who cannot have reliable knowledge of the local circumstances of each town, estimates the local populations on one general plan. His method assumes that the rate of increase since the last census (1901) is the same as that during the ten years between this last census and that immediately preceding it (1891). In the case of Northampton this necessitates the assumption that the progress of the Borough has been as rapid since the beginning of the present century as in the later years of the nineteenth century. I think everyone who has any knowledge of the town will grant that, although we have been progressing, the rate of our progress in recent years has been diminishing somewhat. The population of the town, as estimated by the Registrar General, on the 30th day of June, 1908, would be 96,405, but for the reasons stated above, this is probably an over estimate.

Another method which is frequently adopted is based on a comparison of the numbers of inhabited houses in 1901 (that is at the census) and in 1908. We assume that the number of persons per house remains more or less constant, and thus we can deduce with a certain amount of accuracy the present population. The census returns give the number of inhabited houses in 1901 as 17,602, and I have been enabled, by the courtesy of the Borough Accountant, to obtain the number for the end of the year 1908, viz., 18,918. A certain deduction has to be made from this number to refer it to the middle of the year, at which time all our calculations of the population are made. In this way the population during 1908 is estimated to be 93,102. My predecessor found, however, after careful consideration that the most accurate result in estimating the population so long after the census was obtained by simply adding to the estimated figure for the previous year the natural increase of the population since then, that is, the excess of births over deaths, especially as he was able to obtain a certain amount of fairly reliable information bearing on the local immigration

and emigration amongst the boot and shoe operatives, who, with their families, form the bulk of our population. I have approached one or two local gentlemen, who have more than ordinary opportunity of estimating the amount of movement amongst the workers in the town, and as a consequence I have been assured that during the last year the amount of emigration has been practically balanced by that of the immigration, so that there appears to be very little difference in the two figures; and I feel convinced that the figure arrived at by simply adding to last year's population the natural increase which has taken place since then is the nearest one we shall get to the truth. My estimate of the population therefore, in round numbers, in the middle of 1908, is 93,760. This figure forms the basis upon which nearly all the calculations in the following report are made, and hence the very great importance laid upon this accuracy. Unfortunately I shall be in no position to test this until the next census, in 1911.

The following table indicates the estimated population of each of the wards, based on the census figures and the voters list which the Town Clerk prepares each year. Any mistake in the total population will, of course, be exaggerated in the ward populations, but no greater accuracy, it seems to me, can be obtained.

Ward.	Population 1901.	Voters, 1901.	Voters, 1908.	Estimated Population 1908.	Average Number of Persons per Voter.
St. Michael ...	13734	2358	2384	14580	6.12
Castle ...	11185	1901	1662	10273	6.18
St. Crispin ...	11153	2019	1980	11482	5.79
South ...	7886	1431	1258	7279	5.78
North ...	13781	2353	2279	14014	6.29
Kingsthorpe ...	8979	1677	1975	11004	5.56
St. James' ...	7119	1311	1561	8909	5.71
Far Cotton ...	4086	792	909	4913	5.40
St. Edmund...	9098	1694	2004	11303	5.65
TOTAL ...	87021	15536	16012	93760	5.86

NATURAL INCREASE OF POPULATION.—This figure, which is the excess of births over deaths during the year, is indicated for 1908, and for each of the ten years 1898 to 1907, in the table below. In 1908 the excess

of births over deaths was 912, and the natural increase per 1,000 of the population was 9.7:—

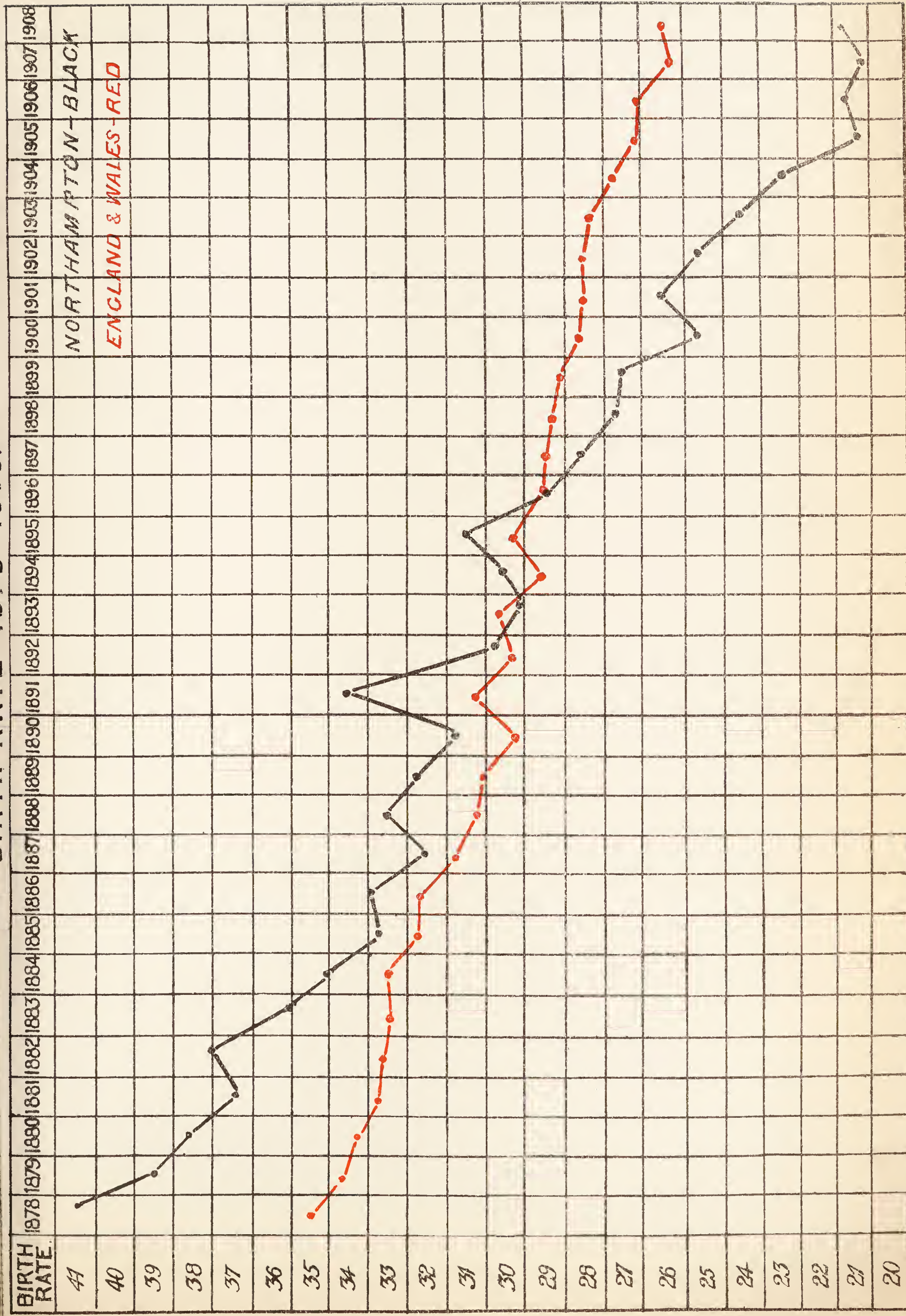
Year.	Population.	Births.	Deaths.	Natural Increase of Population.	Natural Increase per 1,000.
1898	61117	1694	995	699	11.4
1899	61132	1671	921	750	12.3
1900	61147	1546	951	595	9.7
1901	87021	2345	1216	1129	13.0
1902	88206	2272	1294	978	11.1
1903	89960	2194	1219	985	10.9
1904	90340	2102	1185	917	10.15
1905	91230	1937	1159	778	8.5
1906	91640	1985	1061	924	10.1
1907	92750	1956	1151	805	8.7
1908	93760	2043	1131	912	9.7

It is satisfactory to notice that the rate of the natural increase, which was somewhat reduced during 1907, has again increased to nearly its former proportions.

BIRTH-RATE.—In 1908 there were 2,043 births registered. 1,075 of these were males, and 968 females. The birth-rate was 21.78. This is a slight improvement on the rate for 1907, which was the lowest figure on record. A glance at the table below, and at the chart on the opposite page, will show the behaviour of the birth-rate during recent years. The chart indicates graphically the considerable and almost continuous decline since the year 1878. The present figure is the third lowest on record, being equal to that for 1906. It is 2.6 per 1,000 below the average for the decennium 1898 to 1907. In the registration district of St. Giles the births amounted to 1,111; in that of All Saints, St. James and Kingsthorpe to 815; and in Far Cotton to 117. There were 79 illegitimate births registered, or 3.87 per cent. of all the births. In the St. Giles district the figure was 47, or 4.2 per cent.; in the All Saints district 30, or 3.7 per cent.; and in Far Cotton 2, or 1.7 per cent.

The Registrar General, in his fourth quarterly report for the year 1908, gives the birth-rate in England and Wales for the year as 26.5 per 1,000, and states that this is 0.2 per 1,000 above the rate for 1907. The birth-

BIRTH RATE 1878-1908.





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rate in Northampton is well below that for the country in general, and unfortunately this will be seen to have been the case for a great many years past. It seems to me that for a manufacturing town of this size such a fact is to be deplored, as it is generally significant of the reverse of healthful prosperity.

ANNUAL RATE PER 1,000 OF BIRTHS IN THE YEARS 1898—1908:—

	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908
England and Wales	29.3	29.1	28.7	28.5	28.6	28.4	27.9	27.2	27.0	26.3	26.5
Northampton	27.7	27.3	25.2	26.9	25.7	24.4	23.3	21.2	21.7	21.1	21.8

CORRECTED BIRTH-RATE.—"The number of married women of child-bearing ages varies in its proportion to the population in different communities; and the proportion of the number of these at various ages inside this period to the whole also varies."—(Medical Officer of Health's Annual Report for 1905.) In correcting the birth-rate, therefore, these variations must be eliminated before the rates of communities of varying constitutions can be brought into fair comparison. Some years ago Drs. Newsholme and Stevenson worked out a method, which, though probably not quite correct, will be found extremely useful in affording such a fair comparison. They published factors by which the crude birth-rates of various towns might be multiplied so as to produce comparable figures. These factors differ in regard to the legitimate and illegitimate birth-rates. The following is the result obtained by such multiplication:—

The total uncorrected birth-rate is 21.8 per 1,000, which is made up of a legitimate birth-rate of 20.95 and an illegitimate of 0.84. These figures corrected after the above method are altered as follows:—Legitimate birth-rate 20.01; illegitimate 0.86; and the total corrected birth-rate 20.87, or 0.91 per 1,000 below the uncorrected.

DEATH-RATE.—The corrected number of deaths registered during the year 1908 was 1,131, or 20 less than during the previous year. This figure does not represent accurately the number of deaths registered within the Borough during the year, as in order to obtain a fair return of the mortality of the Northampton residents all those deaths which happened in the town of inhabitants of other districts are eliminated, and at the same time deaths of Northampton residents occurring outside the town, and which become

known to me. are included. As Northampton is the centre for most things to the surrounding district there are hospitals and other institutions in the town in which deaths of outside residents frequently occur. In the same way the Berry Wood Asylum and the Kingsthorpe Isolation Hospitals are situated outside the town, and in these institutions residents from Northampton die each year ; consequently it is only fair to include the deaths of such residents in our statistics, and to exclude the former. It is in this way that the figure 1,131 is obtained. Of this number, 577 were males and 554 females. The death-rate was 12.06 per 1,000. This figure is 0.34 per 1,000 below that for 1907 ; 2 per 1,000 below the average annual rate for the ten years 1898 to 1907 ; and, with the exception of the figure for 1906, is the lowest death-rate on record. It must be regarded as a satisfactory death-rate for a manufacturing town of this size.

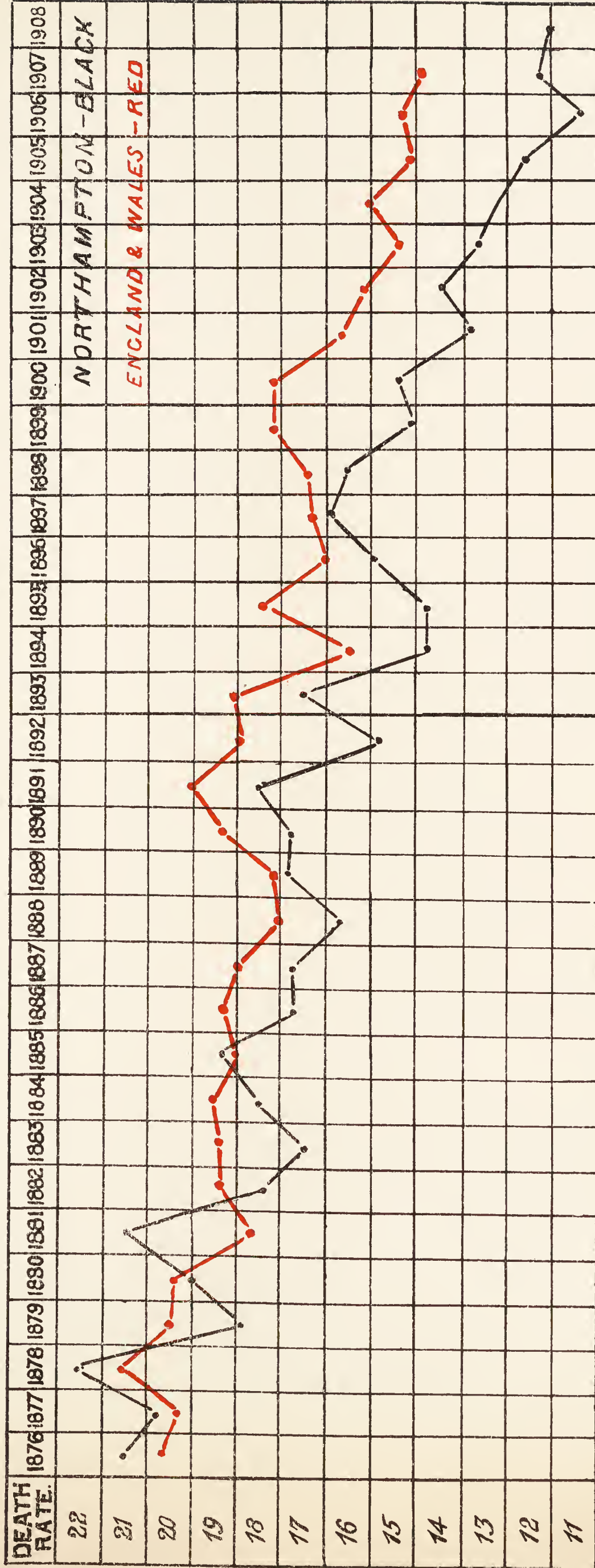
During last year there was an increase in the mortality associated with whooping cough, epidemic influenza, cancer, alcoholism, apoplexy, and senile decay ; and a decreased mortality from measles, bronchitis, pneumonia, suicide, and that group in the Local Government Board's Table IV., at the end of the report, which is termed " all other causes." Roughly speaking, compared with the previous year, the deaths below 15 years have decreased, and those at ages over 15 have increased.

The distribution of the deaths and death-rates amongst the various wards in the town is indicated in the next table:—

WARD.				Deaths.	Death-rate.
St. Michael	...	...	...	191	13.03
Castle	...	...	...	137	13.34
St. Crispin	...	...	...	157	13.68
South	...	...	...	109	14.97
North	...	...	...	168	11.98
Kingsthorpe	...	...	...	96	8.72
St. James	...	...	...	102	11.45
Far Cotton	...	...	...	54	10.99
St. Edmund	...	...	...	117	10.35
BOROUGH	...	...	...	1131	12.06

In the foregoing table those deaths occurring in public institutions have been distributed to the various wards to which the patient belonged before entering the institution.

DEATH RATE 1876-1908.



The Registrar General gives in his fourth quarterly report for 1908 the death-rate in England and Wales as 14.7 per 1,000 of the population. He states that this was 0.3 below that for 1907, and lower than that of any year on record. In comparison with the average rate in the ten years 1898 to 1907, it shows a decrease of 1.7 per 1,000.

Annual death-rate per 1,000 from all causes during the year 1908:—

England and Wales	...	...	...	...	...	14.7
76 Great Towns	...	...	...	...	...	15.8
142 Smaller Towns...	...	...	...	...	...	14.7
England and Wales (less the 218 towns)	...	...	...	...	...	13.8
Northampton—On Net Deaths	...	...	...	...	...	12.06
“Corrected” Death-rate	...	...	...	...	...	12.5

CORRECTED DEATH-RATE.—The age and sex distribution of the population in each town varies, and it is evident that towns containing a larger proportion of inhabitants at the extremes of life are more likely to have a greater number of deaths than those whose population is made up mostly of young adults; consequently, if the comparison between the death-rates of different towns is to be rendered as fair as possible, these rates must be reduced to a common basis by adopting a standard of age and sex distribution for the population. This is done by taking that of the country generally, and in this way the crude death-rate for Northampton has to be multiplied by a factor (1.0397) which the Registrar General published in his annual summary for 1907. This makes the corrected death-rate for Northampton 12.5 per 1,000.

OBSCURE DEATHS.—The percentage of deaths uncertified by medical practitioners was 5.04.

Deaths certified by the Coroner (causes and ages):—

	Under 1 year.	1—5 years.	5—15 years.	15—25 years.	25—65 years.	65 & upwds.	Total.
Accident ... ..	...	1	1	2	9	5	18
Suicide ... ..	...	...	...	2	6	1	9
Heart Disease ... ..	...	...	1	...	7	5	13
Pneumonia	2	1	...	...	...	...	3
All other causes ...	1	...	1	...	2	...	4
TOTAL	3	2	3	4	24	11	47

Uncertified deaths (causes and ages):—

	Under 1 year.	1—5 years.	5—15 years.	15—25 years.	25—65 years.	65 & upwds.	Total.
Convulsions	3	1	...	...	...	...	4
Heart Disease ... ..	...	1	...	...	1	2	4
Premature Birth	7	...	...	...	...	...	7
Senile Decay ... ..	...	...	...	...	...	1	1
All other causes	1	1	...	...	1	...	3
TOTAL	11	3	...	...	2	3	19

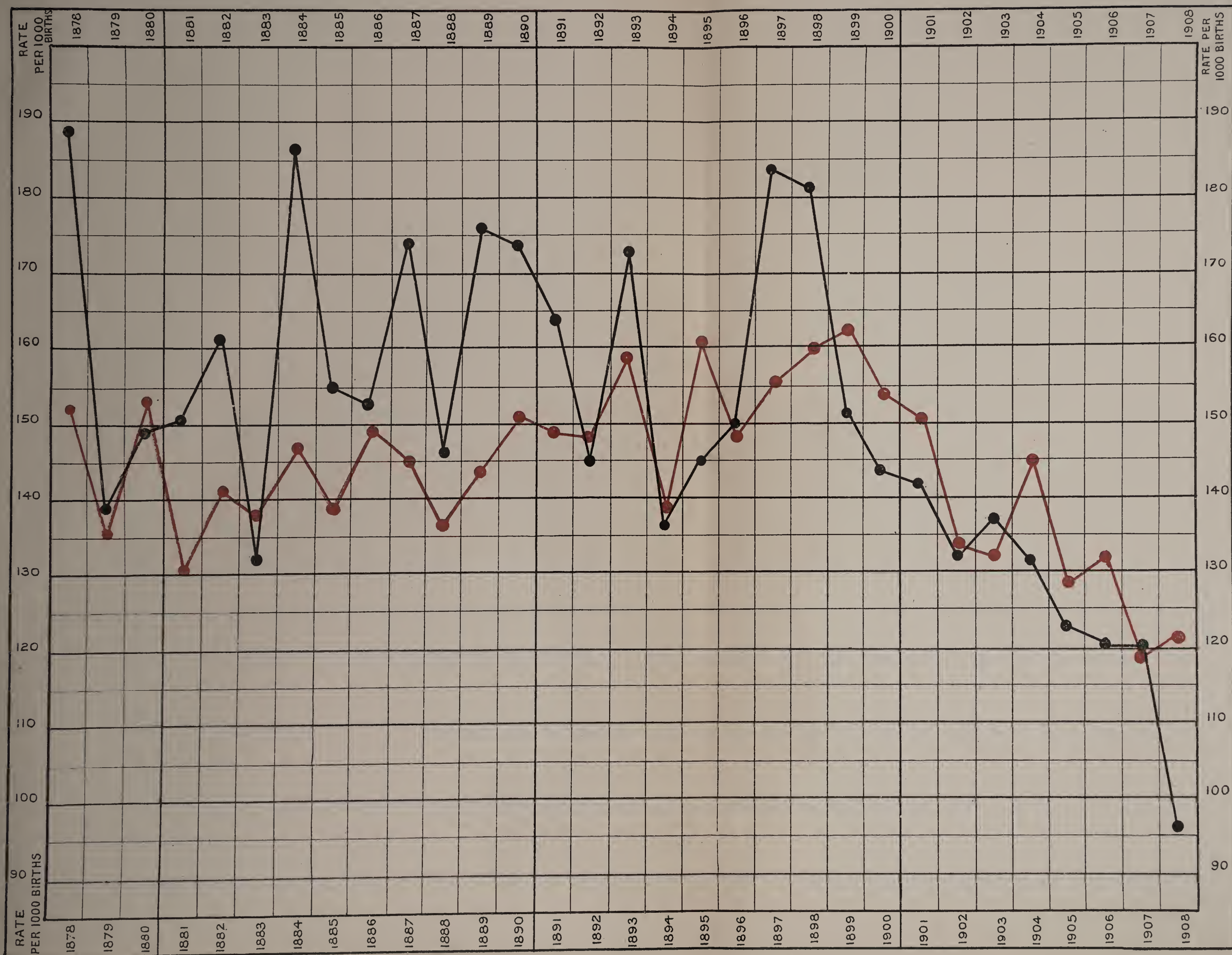
INFANT MORTALITY.—The infant mortality means the rate of deaths amongst children under twelve months of age per 1,000 births registered during the year, and in this way it has a somewhat different significance from any other death-rate. The deaths of 198 children under one year of age were registered, and as there were 2,043 births registered during the same period, the infant mortality is 96.9 per 1,000. This shows a most remarkable decrease of 23.2 per 1,000 on the rate for the previous year, and is far and away the lowest on record.

A glance at the accompanying chart will give some idea of the fluctuations in the infant mortality of Northampton for the last 30 years. For the first 20 of these years the rate varied enormously from year to year, and this seems to have been undoubtedly influenced by the varying annual climatic conditions. Since 1897, however, when the infant mortality measured 184 per 1,000 births, up to the year under consideration, there has been practically a continuous decline, in spite of the varied conditions each year in the climate.

In 1907 the infant mortality was 120 per 1,000 births, and, up to that time, this was the most satisfactory figure we had to show. Comparing it with the rate in other manufacturing towns, it looked fairly satisfactory. I was aware, in a general way, during the year 1908 that our infant mortality figure was remaining fairly low, but it was only when the vital statistics were available at the beginning of the present year that I was prepared for such a drop. So far as I am aware, the conditions in the Borough remained during the year somewhat similar to those in the preceding year, with the exception that there was practically no measles. We had, however, a considerable outbreak of whooping cough in the earlier

INFANT MORTALITY 1878 - 1908.

NORTHAMPTON (BLACK) AND ENGLAND & WALES (RED)



part of the year, which accounted for at least eleven deaths of children under one year of age, and the number of deaths from bronchitis and pneumonia remained at practically the same level as in the previous year. The climatic conditions were also favourable to a low mortality from summer diarrhoeal diseases, though the same remark holds good for the year 1907.

On the whole, therefore, I am unable to account satisfactorily for the marked difference in the infant mortality for the two years, and, so long as this is the case, I fear that some accidental good luck has come our way, which may not be maintained in subsequent years. What gives me hope, however, is the appearance of the above-mentioned chart showing the recent behaviour of the local infant mortality. One point must not be forgotten, and that is the continuous decline in the birth-rate during recent years as the birth-rate chart clearly demonstrates.

TABLE SHOWING THE INFANT MORTALITY FOR THE YEARS
1878—1908, AND THE BIRTH-RATES FOR THE SAME YEARS.

Year.	Birth-rate per 1000 of the Population.	Deaths of Infants per 1000 Births.	Year.	Birth-rate per 1000 of the Population.	Deaths of Infants per 1000 Births.
1878	41.3	188.4	1893	30.0	173.1
1879	39.2	139.7	1894	30.3	136.1
1880	38.6	149.6	1895	31.5	145.8
			1896	29.4	150.6
1881	37.2	150.3	1897	28.6	184.3
1882	38.0	161.8	1898	27.7	181.2
1883	36.0	132.2	1899	27.3	151.4
1884	35.2	186.3	1900	25.2	144.8
1885	33.6	155.1			
1886	33.9	153.5	1901	26.9	142.4
1887	32.4	174.8	1902	25.7	132.4
1888	33.5	146.3	1903	24.4	137.2
1889	32.9	176.4	1904	23.3	132.7
1890	31.7	174.7	1905	21.2	123.4
			1906	21.7	120.9
1891	34.5	164.2	1907	21.1	120.1
1892	30.6	145.4	1908	21.8	96.9

The Registrar General, in his last quarterly report for the year 1908, states that the mortality in England and Wales amongst infants under one year of age per 1,000 births registered was 121, which

is 3 per 1,000 above the rate for 1907, and compared with the average in the ten years 1898 to 1907, shows a decrease of 21 per 1,000. The same figure for the 76 great towns was 128; for the 142 smaller towns 124; and for the rest of England and Wales 110; so that the Northampton figure compares favourably with any of these.

The two tables following show, as in former years, the most usual causes of death amongst infants during the last 12 years, as well as a complete list of the causes of death occurring in each month after birth, and in the case of the first month in each week.

It will be seen that there is an increase in the number of deaths from whooping cough, from premature birth, and from marasmus, while there is a decrease in the number from measles, diarrhœal diseases, and tuberculous diseases; and a marked decrease from those diseases grouped together as "all other causes," and which include congenital debility, infantile atrophy, dentition, &c., &c. Of the 198 deaths registered, 74 occurred under the age of one month, and were mostly due to premature birth, pulmonary collapse, congenital debility, deficient vitality, inanition, and congenital malformations. Such causes are generally considered to be more or less unavoidable, at least by efforts directed towards improving the circumstances after birth; and from the point of view of preventive efforts, these might almost be left out of count. The only useful efforts that can be made in these cases must be directed towards the family conditions, long before the birth of the infants. It has, therefore, been the general rule in the department to restrict our work on infant mortality to those cases where the death takes place after the first month. Of the deaths in this latter category, 120 investigations were undertaken by the department during the year. This number includes 7 enquiries in the case of the deaths of infants over one year of age, and only one in the case of infants under one month.

The following table shows the monthly prevalence of the diseases named as causing death amongst infants, so far as our investigations went:—

Disease.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Marasmus ...	2	1	1	4	...	...	...	6	1	1	2	4	22
Convulsions ...	1	2	2	...	...	...	...	...	...	1	...	...	6
Pneumonia ...	4	2	3	...	2	...	...	1	...	3	1	...	16
Bronchitis ...	...	4	3	3	...	...	2	2	...	2	3	4	23
Meningitis ...	1	...	...	...	...	...	...	...	...	...	1	1	3
Diarrhœa ...	1	...	1	...	...	...	7	6	5	2	...	1	23

DEATHS OF INFANTS.

CAUSE.	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908
Marasmus, Debility and Atrophy	61	70	54	48	?	63	55	54	51	53	54	42
Convulsions 	33	21	30	15	?	?	29	29	20	17	14	17
Bronchitis and Pneumonia ...	54	26	39	45	30	51	56	26	45	14	47	48
Whooping Cough 	30	10	7	7	19	12	14	2	9	3	4	11
Measles 	1	15	1	5	1	10	4	1	6	...	9	...
Premature Birth 	49	47	34	25	53	40	52	55	26	30	30	37
Diarrhoea, Enteritis and Gastritis	52	58	51	28	85	46	47	60	39	68	31	23
All other causes 	43	60	37	51	147	79	44	52	43	55	46	20
TOTAL	323	307	253	224	335	301	301	279	239	240	235	198
TOTAL BIRTHS 	1752	1694	1671	1546	2345	2272	2194	2102	1937	1985	1956	2043
INFANT MORTALITY 	184.3	181.2	151.4	144.8	142.4	132.4	137.2	132.7	123.4	120.9	120.1	96.9

The next table gives the character of the feeding, the physique, and the general surroundings of the cases investigated:—

Disease.	Feeding.				Bottle.			Physique.			House.			Circumstances.	
	Breast only	Bottle only	Breast then bottle	Breast and spoon	Long tube	Boat shape	Milk boiled	Good	Fair	Poor and Puny	Clean	Fairly Clean	Dirty	Comfortable	Poor
Marasmus	7	8	3	3	8	2	10	5	5	11	9	9	3	11	10
Convulsions	1	2	2	1	2	2	3	1	...	5	4	2	...	4	2
Pneumonia	8	4	2	2	5	1	6	10	2	4	8	4	4	9	7
Bronchitis	8	7	3	5	6	4	8	6	4	13	13	10	...	9	14
Meningitis	...	1	1	1	...	2	2	2	...	1	2	1	...	2	1
Diarrhœa...	3	6	13	1	14	5	17	6	6	11	11	9	3	14	9
	27	28	24	13	35	16	46	30	17	45	47	35	10	49	43
															92

One Workhouse case which died of Marasmus was not investigated fully and is not included.

From this latter table it would seem that the use of the long tube feeding bottle was much greater during the year than during the two previous years; while the more hygienic, and slightly more expensive, boat-shaped bottle was less generally used. This is much to be regretted, as there is no comparison between the two from the point of view of healthy rearing of infants. In four cases out of the 120 investigations made full information could not be obtained, for various reasons; but of the remaining 116, 32 gave evidences of breast feeding entirely (27.5 %), and 36 of bottle feeding entirely (over 31 %). The remainder were fed by a combination of the two methods, along with in some cases spoon feeding. Fourteen children were found to be wholly or partly fed on condensed milk, and 25 were fed, partly at least, on some other food—usually one or other of the patent infant foods on the market. Miss Gough (our late Health Visitor) left us or another post in June, and Miss Henry (who was previously one of the Queen's Nurses practising in the town) was appointed in August, and took up her duties early in September. Up to the time of Miss Henry's appointment, the work of the Health Visitor attached to the department had been of a somewhat varied nature, including, besides the direct care of the health of children in their homes, the inspection of women's workshops, the super-

vision of the midwives, and the whole of the investigations into cases of phthisis which came to the knowledge of the department, as well as visits and inspections under the Shop Hours and Seats for Shop Assistants Acts. It was felt, however, that a large portion of this work fell to the role of Inspector rather than to that of Health Visitor, and consequently when the new appointment was made the duties of the Health Visitor were at my suggestion re-arranged by the Public Health Committee. Her work is now restricted to the supervision of the health of young infants and children in their own homes, as far as possible, and to this practically her whole time is devoted. At present arrangements are in force whereby intimation of births is received from the Registrars, through the Education Department, with as little delay as possible; and in every case where the circumstances appear to warrant it, a visit is at once paid to the household, and advice and assistance given to the mother, if she is willing to accept it, on the most healthy method of rearing her child. I am glad to say that so far as my recent experience has gone this advice and help is eagerly accepted, and signs are not wanting that it is being acted on, and I am looking forward hopefully to seeing some good results. If, however, the Health Visitor had imposed upon her all the duties which fell to the lot of the late Health Visitor, it would be quite impossible for her to do this work. I have found, as a result of this recent experience, that a large amount of the faulty rearing of infants amongst the poorer classes is due to the ignorance of the mothers, rather than to their lack of goodwill, or other circumstances.

The following table shows the incidence of the Infant Mortality in the various wards of the town compared with the previous year's figures:—

INFANT DEATHS PER 1,000 BIRTHS IN EACH WARD FOR THE
YEARS 1907 & 1908.

	St. Michael	Castle	St. Crispin	South	North	Kings- thorpe	St. James'	Far Cotton	St. Edmund	Borough
1907	119	189	108	101	135	98	85	139	93	120
1908	55	96	100	150	121	58	122	140	72	97

NOTIFICATION OF BIRTHS ACT, 1907.—This Act was passed in August, 1907, and came into force in the beginning of 1908. It is an adoptive Act, and cannot be applied locally unless and until its adoption has been ap-

proved by the Local Government Board, which must first be assured that the Local Authority is in a position to give effect to its provisions by carrying out any administrative action which may reasonably follow its adoption. The Act, generally, requires the notification of every birth within 36 hours afterwards to the Medical Officer of Health by means of a prepaid letter or postcard by (*a*) the father of the child if he is residing in the house, and (*b*) any person in attendance on the mother at, or within six hours after, the birth. The Local Authority has to provide stamped and addressed envelopes or postcards containing the form of notice to any medical practitioner or midwife practising in the area who applies for them. The Act also provides a penalty on conviction for failure to give notice, unless the person prosecuted can satisfy the Court that he had reasonable grounds for believing that the notice had been given by someone else.

There is no provision for payment for such professional services, nor does the Act do away with the obligation of registration. Still, as well as live, births must be notified. These briefly appear to be the principal terms of the Act.

The object apparently is to bring much earlier than heretofore to the notice of the officers of the Sanitary Authority births of infants in poor neighbourhoods, so that visits may be paid, advice, instruction and help given, and, if necessary, watchful supervision maintained over mothers in the rearing of infants, with the idea of reducing the enormous infant mortality which exists in our large manufacturing towns especially. In so far as its intention goes, the Act is a good one, and no doubt, if efficiently carried out, will go a long way towards attaining its object. It is to be regretted, however, that the methods by which it seeks to attain its object, in so far as these relate to the medical profession, are far below the standard of its intention. So much so, that many large towns, in face of strenuous professional opposition, have refrained from adopting it, and when I first reported to the Sanitary Committee in 1907 I advised a little delay, till some experience of the working of the Act was obtainable. In view now of the results of this experience, with which I have recently been provided, I am about to ask the Sanitary Committee to reconsider the matter, with a view to recommending its adoption (March, 1909).

I hope that, as in other towns where the Act has been adopted, little trouble will be found in carrying out its provisions, and a great reinforcement to our powers in dealing even with an infant mortality such as ours will result.

The Act is in force (January, 1909) in 124 areas. The Registrar General, in his 70th annual report, states that he trusts it may, "along with other motive forces, serve as a most lasting and effective barrier with which to stem the tide of infantile mortality."

CANCER AND OTHER MALIGNANT DISEASES.—There were 93 deaths registered as due to this group of diseases, and the mortality is, therefore, 0.99, which, I am sorry to say, is the highest on record. This is demonstrated to some extent by the following table:—

Year...	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908
No. of Cases...	40	32	52	44	52	76	86	67	83	80	72	93
Rate	0.65	0.52	0.85	0.72	0.60	0.86	0.96	0.74	0.91	0.87	0.77	0.99

The mortality from this group of diseases would appear to be steadily increasing. The cause for this may no doubt be due in some part to the increased care and knowledge which is year by year being brought to bear on the diagnosis, but it is more than suggestive of an actual increase in the incidence of malignant disease. A rough analysis of last year's deaths shows that 53 were those of females and 40 those of males. In the case of females the largest number of deaths was due to cancer of the uterus, to which 16 are assigned; whilst in males the stomach is the organ mostly affected. Only six out of the whole number of deaths occurred under 35 years of age. The greatest number occurred at ages between 55 and 65, namely 28, while between 45 and 55, 24 deaths occurred, and between 65 and 75, 21.

The following table shows the incidence of deaths amongst males and females in each of the Wards of the town during the year:

	St. Michael	Castle	St. Crispin	South	North	Kings-thorpe	St. James'	Far Cotton	St. Edmund	Borough
Males	8	4	7	3	4	3	3	5	3	40
Females ...	10	7	6	5	9	10	1	1	4	53
TOTAL ...	18	11	13	8	13	13	4	6	7	93

TUBERCULOUS DISEASES.—This group of diseases accounted for 127 deaths during 1908. Of these 104 were due to pulmonary phthisis.

This gives a death-rate from phthisis of 1.1 per 1,000. This is a decrease on the numbers for last year, which are given, along with those for 32 previous years, in the table below.

The deaths from tuberculous diseases other than phthisis numbered 23, and the death-rate from this cause was 0.24 per 1,000, which is the lowest figure since 1901.

In the next table is set out the annual death-rates per 1,000 from phthisis, and from other tuberculous diseases in the thirty-three years ending 1908, and also a table showing five-yearly averages during this period. There has been a gradual and almost continuous decline in the mortality from phthisis during this period.

Year.	Phthisis.	Other Tuberculous Diseases.	Year.	Phthisis.	Other Tuberculous Diseases.
1876	2.06	0.57	1893	1.68	0.34
1877	2.00	0.49	1894	1.52	0.14
1878	2.13	0.63	1895	1.17	0.26
1879	1.92	0.56	1896	1.32	0.11
1880	1.58	0.33	1897	1.32	0.39
1881	1.96	0.26	1898	1.88	0.45
1882	1.89	0.26	1899	1.43	0.29
1883	1.92	0.18	1900	1.42	0.29
1884	1.16	0.19	1901	1.21	0.16
1885	1.69	0.15	1902	1.42	0.29
1886	1.70	0.30	1903	1.26	0.30
1887	1.53	0.53	1904	1.15	0.25
1888	1.51	0.47	1905	1.09	0.26
1889	1.72	0.36	1906	0.87	0.34
1890	1.56	0.33	1907	1.25	0.32
1891	1.83	0.40	1908	1.10	0.24
1892	1.63	0.40			

FIVE-YEAR AVERAGES:—	Phthisis.	Other Tuberculous Diseases.
1876—1880	1.93	0.51
1881—1885	1.81	0.20
1886—1890	1.60	0.39
1891—1895	1.56	0.30
1896—1900	1.45	0.30
1901—1905	1.23	0.25
1906	0.87	0.34
1907	1.25	0.32
1908	1.10	0.24

I give here the death-rates from phthisis in the various wards during the

years 1907 and 1908. Compared with last year there is a slight fall in the death-rate in St. Michael's, St. Crispin's and St. James' Wards; and slight increases in each of the others.

PHTHISIS IN WARDS. DEATH-RATES PER 1,000.

	St. Michael.	Castle.	St. Crispin.	South.	North.	Kings- thorpe.	St. James.	Far Cotton.	St. Edmund.	Borough.
1907	1.95	0.96	1.92	0.83	0.85	0.65	1.48	0.60	1.10	1.25
1908	1.50	1.30	1.65	0.96	1.09	0.73	0.67	0.61	1.24	1.10

As in former years, a list is made out, showing the occupations followed by those who died of phthisis during the year. Amongst the males clickers head the list, as in 1906, while in 1907 and 1905 the greatest number of deaths occurred amongst the lasters.

OCCUPATION.	1 to 5	5 to 15	15 to 25	25 to 65	Over 65	Total.
MALES.						
Shoe Operatives—						
Clicker	5	5	...	10
Laster	2	7	...	9
Finisher	7	...	7
Machinist	1	1	...	2
Rough Stuff Man	1	...	1
Rivetter	1	...	1
Shoeroom Man	1	...	1
Shoemaker	1	...	...	1
Shoeroom Foreman	1	...	1
Currier	3	...	3
Baker	1	...	1
Painter	2	1	...	3
Butcher	1	...	1
Grocer	1	...	...	1
Ironmoulder	1	...	1
Whitesmith	1	...	1
Hawker	1	...	1
Photographer	1	...	...	1
Railway Employee	2	...	2
Publican	1	...	1
Tram-Driver	1	...	1
Porter	1	...	...	1
Waiter	1	...	1
Labourer	4	...	4
Commercial Traveller	1	...	1
Insurance Agent	1	...	1
Clerk	1	...	...	1
Army Pensioner	1	...	1
	15	45	...	60

OCCUPATION.	1 to 5	5 to 15	15 to 25	25 to 65	Over 65	Total.
FEMALES.						
Houseworker	2	11	1	14
Domestic Servant	1	...	...	1
Schoolgirl	3	...	...	...	3
Shoe Fitter	3	1	...	4
Shoe Machinist	4	3	...	7
Blouse Machinist	2	...	...	2
Upholsterer's Machinist	1	...	1
Seamstress	1	...	...	1
Tailoress	1	...	1
Furrier	1	...	...	1
Stationer's Assistant	1	1	...	2
Boxmaker	1	...	1
No Occupation	1	...	...	1
Not ascertained	1	3	...	4
	...	3	17	22	1	43
TOTALS (M. & F.)	3	32	67	1	103

It is interesting to note that during the present year, compared with the previous, there is an increased proportion of females, the actual numbers in 1907 being 78 males and 34 females ; while in 1908 there are 60 males and 43 females. No males died under 15 years of age and over 65. One further death was registered during the year, which is not included in the above tables. This, though of a Northampton resident, took place at Berry Wood Asylum, and detailed information was not available.

Voluntary notification of cases of phthisis has been in operation in the town since the latter end of 1900, and investigations in connection with the notified cases, as well as preventive measures to control the disease, have been carried out on much the same lines as formerly. These lines have been fully stated in previous reports. During 1908 an increased number of notifications, compared to the previous year, was received, and the next table shows a comparison between the number of cases notified, and the number of deaths registered during each year since voluntary notification was adopted :—

Year.		Cases Notified.		Deaths Registered.
1901	.....	44	.....	104
1902	.....	34	.....	126
1903	.....	55	.....	114
1904	.....	71	.....	104
1905	.....	67	.....	99
1906	.....	125	.....	80
1907	.....	99	.....	116
1908	.....	117	.....	104

In 1906, for the first time, the number of cases notified was in excess of the number of deaths registered, but in 1907 the conditions reverted to those of previous years, and a greater number of deaths was registered than cases notified. In 1908, however, the notifications again exceeded the registered deaths, although the difference was not anything like so well marked as in 1906. Of the 117 cases reported, 23 died within the year, and 49 deaths were registered amongst the cases previously notified. Thus, of the 104 deaths, 72 were of cases officially known to the department to exist, and therefore 69.2 per cent. of the deaths were those of previously notified cases. This still, however, leaves 32 deaths (or 30.8 per cent. of all the phthisis deaths) amongst cases of which the department knew nothing previously, and in which, therefore, no preventive measures could be taken. This is a fact which we must sincerely regret, as most cases of phthisis are held to be—in the last stages, at least—very infective, and there is little doubt that those 32 deaths occurred amongst a much larger group of cases, the existence of which was unknown, and which is, therefore, a source of considerable danger to the community.

Below will be found a tabular statement, giving information on similar lines to that of previous reports:—

					M.	F.	Total.
Number of cases notified	...	...	...	...	66	51	117
Number of deaths of cases not notified	...	...	...	...	13	18	31
					—	—	—
TOTAL	...	...	...	...	79	69	148
					—	—	—
Number of deaths amongst cases notified previously to 1908	...	...	...	...	...	...	49
Number of deaths of all cases	...	...	...	...	60	43	103

PHTHISIS (1908). DURATION OF ILLNESS.

					Notifications.		Deaths.		Total.
Under 6 months	...	...	...	...	20	...	2	...	22
Over 6 months and under 1 year	...			...	31	...	6	...	37
„ 1 year	„	2 years		...	30	...	10	...	40
„ 2 years	„	3 „		...	9	...	4	...	13
„ 3 „	„	4 „		...	10	...	2	...	12
„ 4 „	„	5 „		...	6	...	1	...	7
„ 5 „ and upwards			...	...	9	...	4	...	13
Not ascertained	...	...	...	...	2	...	2	...	4
TOTAL					117	...	31	...	148

In regard to the duration of illness, considerable difficulty is found in obtaining anything like accuracy. There is no doubt that many patients suffer from phthisis long before they know of it, and it is only when the onset of some more or less acute complication draws their attention to the condition that it leads to a diagnosis. The patient on being questioned affirms that he was quite well until the onset of this complication, and it is a matter of difficulty, even to the professional investigator, to find out with anything like accuracy the date on which the disease began. In the case of non-professional investigators, such as the Inspectors, this difficulty is enhanced. In the foregoing table many of the reports made by the Inspectors have been personally checked by me in a subsequent interview with the patient or his nearest friend, but it was impossible to do so in every case, but even in view of this I feel that too much reliance cannot be placed on the statements contained in this table, and I feel fairly certain that the number of cases in which the duration of illness is stated to be under one year is exaggerated. Even as the statements stand in the table, there is no doubt that information of the existence of a case of phthisis does not reach the department until such a considerable time has elapsed from the onset as to render preventive measures of no great value.

In the next table, which represents the information obtained of some of the habits of the patients, accuracy again depends on the statements of the patients or their friends, and it must be taken with some reserve:—

HABITS :—

Total abstainers	...	...	...	...	...	...	27
Temperate	...	...	...	...	...	...	103
Probably intemperate	...	...	...	...	...	...	9
Heavy drinkers	...	...	...	...	...	...	5
Not ascertained	...	...	...	...	...	...	4
							<hr/> 148 <hr/>

					Males.	Females.	Total.
Single	...	...	...	...	34	41	75
Married	...	...	...	...	40	24	64
Widows and Widowers	...	...	...	...	3	4	7
Not ascertained	...	...	...	...	2	...	2
					<hr/> 79 <hr/>	<hr/> 69 <hr/>	<hr/> 148 <hr/>

ISOLATION OF CASES :—

					Males.	Females.	Total.
Number having separate beds	...				9	4	13
„ „ „ and bedrooms					45	32	77
No isolation	...	...	...	...	23	30	53
Not ascertained	...	...	...	...	2	3	5
					<hr/> 79 <hr/>	<hr/> 69 <hr/>	<hr/> 148 <hr/>

It is extremely difficult to obtain amongst the houses of the poor anything like adequate isolation for the prolonged period during which this disease in many cases lasts, as nothing short of a separate sleeping room for the patient will satisfy this condition. For years it has been the practice, however, to urge attempts to carry this out. I am glad to say that, summarising the investigations made in 1908, there was a distinct evidence of improvement in this direction. The number of patients having separate bedrooms was 77 (about 52 per cent.), while in the previous year only 40 (or about 27 per cent.) maintained this condition. When one considers the conditions of poverty which frequently go hand in hand with this disease, there is no doubt this is a great advance.

I have remarked above that phthisis often exists unrecognised and almost unrecognisable in many persons until the onset of some acute illness, which is frequently a complication of pulmonary tuberculosis. Once started, however, the disease continues its course after the recovery from the acute

condition which appeared to inaugurate it. On this point enquiries were directed during the investigations with the view of eliciting the acute condition if any, which was considered responsible for the setting up of the disease, and the following table is prepared from the reports based on these enquiries.

PHTHISIS. PREVIOUS ILLNESSES :—

Influenza	...	...	...	26	Erysipelas	...	...	...	1
Pneumonia	...	...	...	3	Inflammation of Kidneys	...	...	...	1
Bronchitis	...	...	...	5	Rheumatism	...	...	...	4
Bronchial Catarrh	...	...	...	5	Diarrhœa	...	...	...	1
Pleurisy	...	...	...	12	Gastric Ulcer	...	...	...	1
Inflammation of Lungs	...	...	...	2	Bad confinements and mis-				
Measles	...	...	...	2	carriages	...	...	...	4
Scarlatina	...	...	...	3	"Colds"	...	...	...	15
Enteric Fever	...	...	...	1	No definite illness	...	...	...	56
Debility	...	...	...	1	Not ascertained	...	...	...	5
					TOTAL	...	...	...	148

I have no doubt that most clinicians will agree that influenza forms the spark which sets ablaze many a latent case of phthisis, and the above table bears this out ; while pleurisy, pneumonia and bronchitis are often signs of the pre-existence of tuberculous disease.

The next table shows the relationship of occupation to phthisis :—

PHTHISIS, 1908. CASES INVESTIGATED, OCCUPATIONS :—

Clicker...	...	...	10	Butcher...	...	...	1	Labourer	...	...	8
Laster	...	...	9	Baker	...	...	2	Hawker...	...	...	2
Finisher (hand)	...	...	10	Brewer	...	...	1	Messenger	...	...	1
„ (machine)	...	...	3	Publican	...	...	1	Pinafore machinist	...	...	6
Shoe repairer	...	...	1	French polisher	...	...	1	Upholstery	„	...	1
Rough stuff man	...	...	1	Cycle maker	...	...	1	Dressmaker	...	...	2
Rounder	...	...	2	Shop Assistant	...	...	4	Tailoress	...	...	2
Heeler	...	...	3	Painter	...	...	1	Charwoman	...	...	1
Pressman	...	...	1	Waiter	...	...	1	Washerwomen	...	...	2
Foreman laster	...	...	1	Clerk	...	...	1	Domestic servant...	...	...	2
Leather sorter	...	...	1	Office boy	...	...	1	Housewife	...	...	20
Slugger	...	...	1	Commerc'l Trav'ler	...	...	1	Schoolchild	...	...	7
Closer	...	...	1	Police Constable	...	...	1	Nil	...	...	3
Fitter	...	...	10	Railway man	...	...	1	Not ascertained	...	...	3
Shoe machinist	...	...	7	Tram conductor	...	...	1				—
„ packer	...	...	1	Porter	...	...	2	TOTAL	...	...	148
Brush machinist	...	...		Soldier	...	...	2				—
in skin factory	...	...	2	Stonemason	...	...	1				

Here, as in the list of deaths, the staple industry takes a foremost place, although this, of course, is inevitable, because it is the staple industry.

During the investigations any sanitary defects found or suspected to exist in connection with the premises were dealt with as soon as practicable. Disinfection of the premises, and articles of clothing and bedding, was always strongly advised, and was carried out frequently during the life-time of the patient, and in practically all cases after his death.

Sanatorium Treatment.—The arrangements existing, both previously and at present, for the treatment of suitable cases amongst the poorer classes in sanatoria at the expense of the Council were fully detailed in the report for 1907, and I shall not attempt again to enter into these details in the present report. The sanatoria to which we have sent cases during the year under consideration are the Kelling Sanatorium, Holt, Norfolk; and the Maitland Cottage Sanatorium, Kingwood, Oxfordshire. I may remark, however, that as no beds have been retained in either of those institutions solely for the use of Northampton patients, for the reasons mentioned in the report of 1907, great difficulty and considerable delay have been experienced in obtaining accommodation in both those institutions for our cases. This is one of the reasons why greater advantage has not been taken during the present year of this form of treatment.

Thirty-two patients applied, either directly or through their medical attendant, and were examined by the Medical Officer of Health as possibly suitable for sanatorium treatment during the year, and 11 were rejected as being unsuitable. Of the remainder, one went to a sanatorium through a private agency, and one or two others were offered a chance of this treatment, but declined to avail themselves of it. The medical referee, to whom those passed by the Medical Officer of Health were sent, rejected 11. Nine cases were therefore passed as being likely to benefit permanently by a short stay at one or other of the sanatoria, but of these one was subsequently refused by the sanatorium authorities, as they considered the case too far advanced; and one other obtained an out-patient letter for Brompton Hospital, before he could be admitted to Kelling. The last of those who were admitted, obtained a bed at the beginning of 1909. Of those rejected by the medical referee as being unsuitable, one was afterwards admitted through a private agency to a sanatorium, and another had a short period at the Wilby Home in the county.

Two of those who were sent away during the year were still at the sanatorium at the end, and in considering the results of the treatment below these cases have been left out, to be referred to in a future report. At the beginning of 1908, however, there were two patients under treatment who had been sent during the previous year, but as they had not completed their treatment during 1907, the reports of their condition were not included in that year's report, but were left to be dealt with in the present report.

The following is a short summary of the condition of those patients whose treatment was completed during 1908:—

Case 1907/83. M. 22. Single. Boot Finisher.—Returned from Maitland Cottage January 4th, 1908; away 56 days. Family history of phthisis. Poor circumstances. Delicate physique. Did well at sanatorium, but was much troubled about family poverty, and wished to return much sooner than was considered desirable. Insisted on continuing his former employment at once on his return, as he could not obtain any other soon enough. At the end of the year was still working, but was losing weight. Should have done better but for his circumstances.

Case 1907/86. M. 28. Single. Clicker.—Returned from Kelling March 16th, 1908; away 91 days. Family history of phthisis. Circumstances fairly comfortable. Nervous, excitable man, but otherwise very suitable. Did very well at the sanatorium, and the disease was reported as arrested. At the end of the year he was still very well, but for months had not obtained suitable employment. Recently, however, he has been able to obtain light work as a traveller.

Case 1908/8. F. 25. Single. Gold stamper in a boot factory.—Returned from Maitland Cottage July 30th, 1908; away 139 days. Well-marked family history of phthisis. Delicate girl, but seemed an early and suitable case. Did very well for the first three months while away, and then suddenly took worse, and gradually lost all the improvement. Her friends insisted on her coming home and resuming her old occupation, as they said they could not afford to lose her wages. Has since gradually become worse, and at the end of the year was confined to bed, and was worse than when first sent away.

Case 1908/46. F. 29. Single. Housekeeper.—Returned from Maitland Cottage, November 6th, 1908; away 168 days. Fairly comfort-

able circumstances. Family history of phthisis. Delicate girl, but a fairly suitable case. Made slow but steady progress while away, and returned with the disease apparently arrested. Has continued to take care of herself on the lines laid down at the sanatorium, but has been quite able for her housework, and has assisted in the shop attached to the house. At the end of the year she looked, and felt very well. So far a most satisfactory result.

Case 1908/24. M. 38. Married. In business for himself in a small way at home, as a boot repairer.—Returned from Kelling August 10th, 1908; away 112 days. Circumstances fairly comfortable. No family history of phthisis, but of nervous instability. Suitable case, and did well at the sanatorium. Signs of the disease disappeared, and the condition was apparently arrested. Was able to return to his occupation, which is comparatively light, with hours which he can regulate himself. Has continued so far well, but with occasional colds, and has maintained his improvement.

Case 1908/36. M. 23. Single. Stonemason.—Returned from Maitland Cottage August 29th, 1908; away 84 days. Circumstances fairly comfortable. Family history of phthisis. The patient was fairly strong generally, and the signs of the disease were few. Did well at the sanatorium. Advised not to return to his old employment, and efforts were made to obtain him more suitable work, for months, however, without success, at which he became much depressed. At the beginning of the present year (1909) out-door work was obtained for him, temporarily, under the Corporation, and he is now improving.

Case 1908/60. M. 26. Married. Shop Assistant.—Returned from Maitland Cottage October 28th, 1908; away 84 days. Fairly comfortable circumstances. No family history of phthisis. Fairly healthy otherwise, but losing flesh, and no energy for work. Early and suitable case. Made steady progress at the sanatorium, and returned with the disease apparently arrested. Obtained light work as a porter in a grocer's business. Is now working hard, and feeling as well as ever he did.

The above cases are too recent to allow of any fair judgment to be formed on the results of their treatment, but it may be noted from the foregoing report that the results in those cases where the circumstances are poor

are far different from those in which the social conditions are more comfortable. It seems to me that sanatorium treatment alone, unaccompanied by rigorous after-care, is somewhat disappointing amongst the poorer classes. This appears to be the opinion also of my predecessor, under whose regime this work was inaugurated. In his report for the year 1906 he states: "The results are decidedly disappointing to those who pin their faith to sanatorium treatment; but they illustrate the correctness of the view put before the Sanitary Committee that amongst the poor sanatorium treatment, unless followed up by home treatment, with sufficient food, and outdoor work of not too severe a character, is likely to be unsuccessful." As at present no organised attempt to carry out this after-care is in force, it has seemed to me necessary in selecting cases to take into consideration the social circumstances, if successful results are to be obtained.

This consideration, therefore, has weighed in my mind rather more than I could have wished in selecting the cases for treatment during the year; and hence is in great part responsible for the smaller number of patients treated. Previous to the present year numerous complaints were made about the poor results and in my endeavour to obtain better results I have felt bound to take such things into consideration. I am well aware that this means practically the putting out of reach of the poorest of our townspeople the benefits of this treatment. Experience shows, unfortunately, that this disease goes hand in hand with much poverty but I am convinced that sanatorium treatment is the best at present known for this disease, provided it is looked upon only as a part of the treatment, along with a considerable amount of after-care, and not as in itself the complete measure of dealing with the disease. I think our results, both in the case of the individual, and in the case of the community, would be far different if our measures included the means of dealing properly with our patients when they return from the sanatorium. For this reason I have not looked with encouragement on the proposals to spend large sums on sending patients away to sanatoria alone, without the provision of further measures.

I now give a few comments on the condition of those patients who were sent to sanatoria during previous years. I have brought the report up to date (the end of 1908), and the latest results since the beginning of this work are presented:—

Case 1906/113. M. 25.—Returned from Kelling February 19th, 1907.
Has done very badly. Very severe cough. Was in Kingsthorpe

Hospital for seven months during the year, and improved temporarily. Is now, however, in the last stages.

Case 1906/116. F. 36.—Died July 11th, 1907, in the last stages of phthisis.

Case 1906/112. M. 27.—Returned from Kelling March 21st, 1907.—Fairly well. Able and willing to work, but much depressed because he cannot find suitable employment.

Case 1906/121. M. 19.—Returned from Kelling May 6th, 1907. Went back to the sanatorium as a working patient, where he still remains, apparently in good health.

Case 1906/122. M. 16.—Returned from Kelling May 27th, 1907. Is very well. He is under no necessity to work for his living, and has not attempted to do so until, at the end of the year, as he was feeling depressed, he obtained light out-door work.

Case 1907/6. M. 27.—Died February 1908, of advanced phthisis.

Case 1907/18. F. 29.—Returned from Kelling May 11th, 1907. Has not made satisfactory progress during the year. Was admitted to Brompton Hospital in July, and in the beginning of 1909 went to Frimley Sanatorium, in Hampshire. Said not to be any better.

Case 1906/102. M. 21.—Returned from Kelling June 29th, 1907. Has remained in fairly good condition, and is feeling well. In August he went to Leicester as a traveller, and now earns 15s. a week and commission. A fairly satisfactory result so far.

Case 1907/17. F. 17.—Returned from Kelling June 29th, 1907. Has not improved during the present year. Was at Northwood sanatorium for thirteen weeks. Has now got light work as a clerk, and seems fit to do this, although rather weak.

Case 1907/39. M. 28.—Returned from Kelling June 29th, 1907. Has gone gradually down hill, and died in April, 1908.

Case 1907/42. F. 20.—Returned from Kelling August 31st, 1907. Is at present very well, and has easily maintained her improvement. Is now keeping house for a relative in the country.

- Case 1907/75. M. 18.—Returned from Maitland Cottage October 15th, 1907. Seems to be doing well. Working constantly as a leather dresser, and making about 18s. a week.
- Case 1907/40. M. 27.—Was first at Kelling, and returned on June 19th, 1907. Was then sent to Maitland Cottage, and returned on December 10th, 1907. Could not get suitable employment, and got gradually worse. Was admitted to Kingsthorpe Hospital, but would not remain more than a few days. Now appears to be in the last stages of the disease, and is receiving parish relief.
- Case 1906/40. F. 17.—Returned from Kelling September 6th, 1906. General health somewhat better, but is still attending the General Hospital. Is able to do a little light house-work.
- Case 1906/55. F. 57.—Returned from Kelling September 21st, 1906. Still working, as a caretaker of a school. Maintains fair health.
- Case 1906/9. M. 25.—Returned from Kelling November 24th, 1906. Confined to bed. Gradually getting worse. Unable to work.
- Case 1906/48. M. 48.—Returned from Kelling October 23rd, 1906. Became gradually worse during the present year, and died in July.
- Case 1906/36. M. 44.—Returned from Kelling October 23rd, 1906. Has not maintained his improvement. Can hardly get about. Spends most of his time in bed.
- Case 1905/62. M. 20.—Returned from Kelling September 29th, 1906. Died after a severe hæmorrhage, February 21st, 1908.
- Case 1906/82. F. 30.—Returned from Kelling November 3rd, 1906. Still working as a housewife at home, but is gradually getting weaker. Was at Brompton Hospital for four months during the year.
- Case 1906/51. M. 19.—Seems to be maintaining his improved condition, and is working as a bookbinder ; earning 28s. a week.
- Case 1906/93. M. 45.—Returned from Kelling, February 2nd, 1907. Became progressively worse during the year. Was a patient at Kingsthorpe Hospital for three months, but on his return home became much worse, and died in the advanced stages of the disease in November, 1908.

In considering this latter report, it may be noted that at periods varying from 13 months up to 2 years and 4 months, after leaving the sanatorium, 11 out of the 23 patients are working, and therefore leading fairly useful lives (barely 48 per cent.). Over 26 per cent. of the patients are dead, and the same proportion is quite incapacitated from work. It must be admitted, however, as stated in previous reports, that a number of these latter cases were not very suitable for sanatorium treatment, especially those sent during the later months of 1906 and the earlier months of 1907. I think further comment on my part is unnecessary, except to say that I do not consider that the treatment in the sanatoria is in any way to blame for these results.

The Borough Hospital for Consumptives, Kingsthorpe.—It was mentioned in the report of the previous year that a ward block, entirely fenced off and isolated from the fever wards in the Borough Hospital, had been set apart for the isolation of advanced cases of tuberculous phthisis, and a certain proportion of the preventive measures against this disease is comprised in the work of this Institution. The type of case dealt with here is exactly opposite to that included in the preceding section of the report. In this case our aim is to treat the disease at the end of its course, when it is believed to be in its most infective period. The type of case sought is that considered to be beyond all hope of cure, the object being to isolate the infection by removing these cases from amongst crowded households in the poorer neighbourhoods. No real treatment of the disease is attempted, but the later symptoms are, as far as possible, alleviated, and the patient's condition rendered as comfortable as possible. It has been found, however, during the year, that in consequence of the rest and diet obtained in the Hospital, quite a number of the cases improve so much that they wish to return home. Although this is gratifying from one point of view, it rather defeats the object of the Hospital, as the temporary benefit soon disappears, and the chances of the spread of infection are only restrained for a period. There is, therefore, considerable difficulty in selecting suitable cases.

The number of beds set apart for the treatment of phthisis in this hospital is ten, and during 1908 there was little difficulty in keeping them filled. At the end of 1907 there were ten cases (four males and six females) remaining under treatment in the hospital, and during 1908 sixteen cases (eleven males and five females) were admitted, so that 26 cases were isolated during some part of the year. Of these, 14 left the hospital, usually at their own request, some because they had considerably improved since their admission, and

some because the facilities for isolation at their homes had increased. In each case the patient was, temporarily at least, much better, and he had been instructed, in some measure, how best to avoid spreading the disease. Five cases (three males and two females) died, and at the end of the year seven cases were left in hospital (three males and four females). The hospital mortality was, therefore, 26.3 per cent.

The five deaths which occurred represent 4.8 per cent. of the total deaths in the Borough during the year, and in this way some reduction was effected in the amount of infective material let loose in the town, although this proportion was not much more than half that of the previous year.

In some towns hospital wards, built and equipped as much as possible on the plan of the sanatorium, are set apart for the purpose of temporarily accommodating phthisical patients, in order to train them, as far as possible, to control the spread of the infection from themselves to their associates when they return home. I believe some good preventive work has been done in this way. It is obvious that even a month's practical demonstration on such matters, is worth years of precept, verbal or printed. The wards at Kingsthorpe do not lend themselves, by construction and arrangement, to this type of work, and are not intended primarily to be used thus. It is rather sought to segregate the most virulent infective material removed from close association with that susceptible of infection, and to keep it isolated, if possible, till the end of its existence, under more attractive surroundings.

SUMMARY OF PREVENTIVE MEASURES AGAINST TUBERCULOSIS.

- (1) Voluntary Notification.
- (2) Provision at the public expense of Bacteriological examination of sputum of phthisical or suspected phthisical patients.
- (3) Visit, in all cases, as soon as notification is received, at the house of a phthisical patient by an officer of the Health Department, for the purpose of (a) obtaining information of the conditions which have helped to determine the spread of the disease or are likely to spread it further, with the view of removing such, if possible ; (b) leaving a printed leaflet of advice on the easiest methods of prevention, and further explaining the terms of such leaflet ; (c) offering, where necessary, a periodical

supply of disinfectant for the sputum, and, in necessitous cases, a bottle for its reception ; (*d*) arranging for the disinfection of premises in all cases after the death of the patient, and in some cases during his life-time ; (*e*) reporting to the Medical Officer of Health any cases where institution treatment is desired or is advisable.

- (4) Visit by Medical Officer, especially in such cases where sanatorium treatment in the early stages, or Hospital isolation in the later stages, is advisable, or is desired.
- (5) Provision of Hospital Isolation in later stages, where possible, to protect susceptible contacts in crowded households of the poor.
- (6) Provision of Sanatorium Treatment in selected cases when beds are available, after examination by Medical Officer of Health and Medical Referee.
- (7) Subsequent periodical visits by officers of the Department, to give further advice, and to report on the carrying out of preventive measures already recommended.

Although in some respects more is done in Northampton for the prevention of phthisis than in many other large towns, our measures are still somewhat incomplete. I believe better results could be obtained by doing a little along the whole line of defence than by concentrating the bulk of our efforts on one or two special points. I am decidedly of opinion that much of the energy directed to the sanatorium treatment of early cases is wasted, for the want of systematic after-care, as I have already stated. The difficulty of obtaining information of the existence of the disease early enough is a great stumbling-block to advance. Notification in many cases comes too late to have its full value. This would matter less if the patient himself were warned on the earliest opportunity of the nature of his disease, and of the precautions he should adopt. In such cases, where there were objections to notification because of the possible interference of the Sanitary Authority, it would be at least gratifying to know that other means had been adopted, which, if not so effective, were, at least in some measure, compensatory. I regret, however, to find that in quite a number of cases visited the patient himself, and sometimes even his friends, had not been informed of the nature of his disease, although under treatment for a considerable time, and the visit of an inspector was the first intimation given. Under these circumstances, preventive measures have little chance of success. The bulk of the

cases notified are equally unsuitable for curative treatment in sanatoria and for the more or less complete isolation aimed at in the wards for advanced cases, but beyond advice and disinfectants given, little is at present attempted for this intermediate type of case.

I should like here to draw attention to the Public Health (Tuberculosis) Regulations, 1908, framed by the Local Government Board under powers provided by section 130 of the Public Health Act, 1875, as amended by the Public Health Act, 1896. These Regulations are binding on all Sanitary Authorities and Boards of Guardians, and came into operation on January 1st, 1909. They require the notification of cases of phthisis by the Medical Officer of a poor law institution within 48 hours after diagnosis in the case of a poor person who is an inmate of the poor law institution. In the same way a District Medical Officer has to notify cases amongst persons upon whom he is in medical attendance as a poor law medical officer.

Superintending Officers of a poor law institution have to forward to the Medical Officer of Health the intended address of a pauper who has left the institution who has been notified by the Medical Officer of the institution as suffering from phthisis. Relieving Officers have likewise to notify change of residence amongst poor persons who have been notified by the District Medical Officer as phthisical cases.

Notification forms have to be provided by the Guardians, and certain fees for notification have to be paid to these officers by the Sanitary Authority receiving the notifications.

These regulations are fully explained in a circular letter issued by the Local Government Board at the same time, which has since been supplemented by a memorandum by the Board's Medical Officer, Dr. Newsholme, dealing with the regulations from the medical standpoint. The order itself refers only to those cases which come under the care of the poor law Medical Officers, and indicates certain lines on which preventive action should be taken ; but the memorandum urges that such action should, as far as possible, extend to other than poor law cases, especially where voluntary notification is practised.

In addition to the measures already in force in Northampton, all of which are included, the provision of wards for the reception of patients for short

periods for the purpose of educating them in preventive methods, as already described, is strongly recommended. The class of case here dealt with is that intermediate between the early curable case and the advanced case which is sought to be dealt with at Kingsthorpe. The provision of a Tuberculosis Dispensary to supervise home treatment on the lines adopted for some years now in Edinburgh, and detailed at length by my predecessor in his Annual Report for 1904 (page 52) is equally urged. So is the rigorous inspection of meat and milk, in order to eliminate tuberculous contamination from this source.

In view of some remarks made above, it is interesting to quote the words of the memorandum: "When a diagnosis has been secured, the first and most essential point is for the doctor in attendance, whether he be the poor law Medical Officer or a private practitioner, to acquaint the patient with the nature of his illness. This is indispensable if the active co-operation of the patient in regard to precautions is to be secured."

In future the Local Government Board requires the Medical Officer of Health to report annually to what extent those measures recommended are being carried out within his district. It is obvious, therefore, from the details of the present report, that there are still methods of defence against this disease of which we have not yet availed ourselves, and a gradual advance along the whole lines indicated above seems to me to be preferable to a rapid advance in one or two directions only.

Before leaving the subject of tuberculosis, I think further reference should be made to the measures for the protection of our food supply from the specific virus of this disease. The three interim reports already issued by the Royal Commission on Tuberculosis indicate conclusively the opinion of the Commission that tuberculosis in animals can be conveyed to human beings through the agency of tuberculous flesh and tuberculous milk. I have already brought to the notice of the Sanitary Committee what I consider to be the insufficiency of our present methods of meat inspection, and at the time of writing, this matter is under consideration by the Committee. In regard to the milk supply, I am at present unable to gauge the extent of our danger in this respect, as I have no knowledge of the amount of tuberculous milk sold in the town. In 1907, the Medical Officer of Health of Birmingham, by taking samples from the milk churns coming daily into the railway stations of that city, found, on submitting those to bacterio-

logical examination, that 10 per cent. was contaminated with the living germs of this disease. A similar condition of affairs has been found to exist in Liverpool, Manchester, Leeds, and Sheffield. The danger of such milk to the inhabitants, particularly to infants and invalids, in the light of the findings of the Royal Commission, is obvious. Before any knowledge of the proportion of Northampton's milk supply thus contaminated can be acquired, investigations on the same lines must be undertaken ; but there is no great reason to suppose that our conditions will very materially differ from those of these other large towns. We have, unfortunately, no powers as yet for effectively dealing with such a state of affairs, though it is certainly in our favour that a large proportion of the cowsheds in which our milk is obtained is within our own boundaries, and a certain amount of direct control can hence be exercised. I believe that legislation enabling us to more effectively deal with our milk supply is not far off, and I should like to have authority to make investigations by means of systematic examination of samples of our milk supply, so that some idea of the extent, and perhaps the direction, of our danger in this respect, may be indicated. The necessary money would, in my opinion, be of more value spent in this direction than in the sanatorium treatment of early cases of phthisis amongst the poor, at least in present circumstances.

SPECIFIC FEBRILE or ZYMOTIC DISEASES.—There were 73 deaths registered during the year as due to one or other of the seven principal zymotic diseases. This is a decided improvement on the previous year, when the number was 88. The zymotic death-rate for 1908 was 0.78, while in 1907 it was 0.95 per 1,000. Not since the passing of the Public Health Act in 1875 can I find any record of so low a zymotic death-rate, and only once (in 1892) have so few deaths been recorded, and that was in a year when the estimated population of the borough was less than two-thirds its present number. The Registrar General, in his fourth quarterly report for 1908, states that the zymotic death-rate for England and Wales was 1.29 per 1,000 of the living, so that the position of Northampton, compared to that of the country generally, is a decidedly favourable one.

STATISTICS FOR THE YEARS 1897—1908 ; NORTHAMPTON :—

	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908
Zymotic death-rate	2.7	2.2	1.5	1.6	1.9	1.5	1.3	1.5	1.0	0.9	0.9	0.78
Deaths	164	137	93	98	168	134	120	139	94	84	88	73

DEATHS FROM ZYMOTIC DISEASES IN DISTRICTS, 1908.

WARD.	Small Pox.	Measles	Scarlet Fever.	Whoop- ing Cough.	Diph- theria.	Typhoid Fever.	Dia- rrhœa.	Total.	Death- rate.
St. Michael	I	4	...	I	I	7	0.48
Castle	I	3	I	I	5	II	I.07
St. Crispin	...	I	I	I	I	...	2	6	0.52
South	2	2	I	4	9	I.24
North	I	6	...	I	IO	18	I.28
Kingsthorpe	...	2	...	3	...	...	I	6	0.54
St. James	I	5	...	...	I	7	0.78
Far Cotton	I	...	...	2	3	0.61
St. Edmund	3	...	I	2	6	0.53
BOROUGH	...	3	5	28	4	5	28	73	0.78

The zymotic death-rate for the 76 great towns was, according to the Registrar General's report, 1.59 ; for the 142 smaller towns, 1.26 ; and for rural England and Wales, 0.99. I have not yet got the figures for the great towns individually, as they are not yet published, so that I cannot state the position amongst these towns taken by Northampton in this mortality table, but judging by the totals given above it must be a very good one.

In comparison with last year one has to note a great diminution in the number of deaths from measles, and a considerable increase in those from whooping cough.

SMALL-POX.—The year 1908 passed without any notification of a case of this disease, and consequently there were no deaths. Since the one death which occurred in the year 1904, this disease has not been fatal in the town ; and since the year 1905 there have been no cases notified. During this time the whole country has been markedly free from this disease. It is very fortunate for the town that although it appears to be very inefficiently protected by vaccination, England and Wales generally is not unprotected to anything like the same extent, and therefore, from its situation, Northampton participates in the immunity enjoyed by the country in general.

VACCINATION.—Through the courtesy of the Medical Officer of Health for the County in supplying me with the figures, I have been enabled, as in former years, to calculate roughly the amount of vaccination carried out in the district. The figures supplied apply to the Northampton Union, which does not closely correspond in area to the area of the County Borough, as the district of Far Cotton is excluded, and certain other districts, such

NOTIFICATIONS OF INFECTIOUS DISEASES, 1908.

1908.	Small Pox.	Typhoid Fever.	Ery- sipelas.	Puer- peral Fever.	Scarla- tina.	Diph- theria.	Mem- branous Croup.	TOTAL.
To January 4	2	...	5	1	1	9
Week ending „ 11	2	3	1	7	...	...	13
„ „ 18	2	2	1	6	...	...	11
„ „ 25	5	...	1	5	1	...	12
„ February 1	3	2	...	8	...	...	13
„ „ 8	2	2	...	4	...	...	8
„ „ 15	1	1	11	...	...	13
„ „ 22	1	...	...	11	1	...	13
„ „ 29	1	2	...	16	1	...	20
„ March 7	2	2	8	1	...	13
„ „ 14	2	1	...	11	1	...	15
„ „ 21	1	...	10	...	...	11
„ „ 28	2	...	6	...	...	8
„ April 4	2	...	1	1	...	4
„ „ 11	1	...	7	...	...	8
„ „ 18	3	...	...	4	...	...	7
„ „ 25	1	...	9	...	...	10
„ May 2	10	...	...	10
„ „ 9	1	...	9	3	...	13
„ „ 16	3	...	7	...	...	10
„ „ 23	2	...	15	...	...	17
„ „ 30	4	...	9	...	...	13
„ June 6	3	...	3	1	...	7
„ „ 13	1	2	...	6	1	...	10
„ „ 20	1	...	5	...	...	6
„ „ 27	1	...	...	17	1	...	19
„ July 4	4	...	10	...	...	14
„ „ 11	1	1	3	...	...	5
„ „ 18	4	...	11	...	...	15
„ „ 25	5	...	...	5
„ August 1	2	...	17	...	...	19
„ „ 8	1	4	...	8	...	...	13
„ „ 15	1	...	7	...	1	9
„ „ 22	4	...	7	...	...	11
„ „ 29	2	...	7	...	...	9
„ September 5	1	...	10	1	...	12
„ „ 12	1	...	16	2	...	19
„ „ 19	3	...	13	...	...	16
„ „ 26	2	3	...	16	1	...	22
„ October 3	3	...	22	2	...	27
„ „ 10	2	4	1	16	1	...	24
„ „ 17	2	...	35	2	...	39
„ „ 24	1	...	27	...	...	28
„ „ 31	5	...	45	...	...	50
„ November 7	4	...	45	...	...	49
„ „ 14	1	...	...	30	...	...	31
„ „ 21	1	4	...	31	...	...	36
„ „ 28	1	6	...	21	...	...	28
„ December 5	1	2	...	27	...	...	30
„ „ 12	3	...	16	2	...	21
„ „ 19	6	1	24	...	...	31
„ „ 26	6	1	28	...	...	35
„ January 2 (1909)	...	1	2	...	24	...	...	27
1908	33	118	10	731	24	2	918
1907	38	76	5	307	25	3	454

as Great and Little Billing, Weston Favell, Dallington, Duston, etc., are included. As the great majority of the population, however, corresponds to that of the borough, the figures, although not quite accurate, are sufficiently so for a practical estimate.

Table showing the number of children per cent. WHO HAVE NOT BEEN VACCINATED, after deducting the children who died before vaccination could take place:—

1893-97	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907
83.3	81.4	73.5	76.2	66.6	58.7	62.9	76.2	66.8	67.1	76.8

The 1907 figures are the latest available, and they show an increased proportion of children who have not been vaccinated. 1,243 certificates of conscientious objection were granted during that year, compared with 1,944 births in the Union during the year. 151 children died before being vaccinated, and 150 are not yet accounted for. Northampton apparently relies on the more expensive, more difficult, and more uncertain methods of coping with this disease, such as isolation, quarantine, etc., rather than vaccination. From what I have learned of the feeling in the town, I think it would be of little avail at present to endeavour to counteract this feeling.

MEASLES.—The year 1907 was marked by an abnormal prevalence of this disease in the town, and it was to be expected from the recent history of this disease that the year 1908 would be one of comparative freedom, and such was the case. Only three deaths were registered, and only 16 cases were reported to the Health Department from the schools. It has been noticeable from recent previous records that this disease has a tendency to recur in epidemic form every second year, and as 1908 showed such a small number of cases, I fear we shall have to look for a much more serious prevalence during 1909, and up to the date of writing this report (March, 1909) there are many indications that this will be so. No great reliance, however, can be placed on the number of deaths as an indication of the prevalence of the disease at any one period, as the nature and complications of measles are such that the effect of season causes great variations in its fatality.

As measles is not compulsorily notifiable in the same way that scarlet fever and small-pox are, my only knowledge of its prevalence is based on the reports of the teachers in the elementary schools, who are instructed to send me weekly notifications of suspected infectious illness amongst their scholars, and I have to acknowledge the great help afforded me by the majority of the teachers in this way. The importance of advice given, and supervision exercised in the earlier stages of the disease, in those cases where no medical practitioner is in attendance, can hardly be over-estimated in guarding against the lung and bronchial complications so fatal to young children with measles.

TABLE SHOWING THE DEATHS AND DEATH-RATES FROM MEASLES SINCE THE COMMENCEMENT OF SCHOOL NOTIFICATION:—

Year.	Number of cases notified from the Public Elementary Schools.	Deaths.	Death-rate Per 1,000.
1898	542	33	0.54
1899	205	1	0.02
1900	637	21	0.34
*1901	314	5	0.05
1902	1157	43	0.48
1903	482	10	0.11
1904	22	1	0.01
1905	2184	15	0.16
1906	5	...	...
1907	1395	29	0.31
1908	16	3	0.03

*Borough was extended in this year.

The Registrar General, in his report already quoted, states that 7,910 deaths occurred from measles during 1908, which gives a death-rate for England and Wales of 0.22 ; for the 76 great towns, 0.31 ; for the 142 smaller towns, 0.20 ; and for rural England and Wales, 0.06. Our local death-rate of 0.03 may be again compared to our advantage.

SCARLATINA.—This disease was unfortunately very prevalent in the town during the year. The notifications numbered 731, compared with 307 in 1907, 276 in 1906, and 827 in 1905, while in 1904 the number of notifications was 2,224. A glance at the following table will indicate the tendency of this disease to recur in epidemic waves every five or six years, the epidemics generally extending over a portion of the period included in three conse-

SCARLATINA.—1897-1908.

Year.	Population.	Notifi- cations.	Attack Rate per 1,000.	Deaths.	Death-rate.	Case Mortality per cent.	Zymotic Death-rate.	General Death-rate.	Removed to Hospital.	Percentage Removed.
1897	61102	866	14.2	41	0.67	4.7	2.7	17.0	432	49.8
1898	61117	731	11.9	15	0.24	2.0	2.2	16.2	317	43.1
1899	61132	338	5.5	11	0.18	3.2	1.5	15.0	232	68.3
1900	61147	93	1.5	3	0.05	3.2	1.6	15.5	67	72.1
1901	87021	171	1.96	3	0.03	1.7	1.9	13.9	108	63.2
1902	88206	161	1.82	3	0.03	1.9	1.5	14.7	118	73.2
1903	89960	662	7.36	24	0.27	3.6	1.3	13.5	398	60.1
1904	90340	2224	24.62	40	0.44	1.8	1.5	13.1	746	33.5
1905	91230	827	9.06	16	0.18	1.9	1.0	12.7	493	59.6
1906	91640	276	3.01	5	0.05	1.8	0.9	11.6	208	75.4
1907	92750	307	3.3	5	0.05	1.6	0.9	12.4	222	72.3
1908	93760	731	7.8	5	0.05	0.7	0.8	12.0	451	61.7

cutive years. If history repeat itself at the present time we may look for at least an equal prevalence, if not a greater, during the present year, and so far the indication seems likely to be fulfilled. During the first three months of 1909 the number of cases notified indicates a continuance of the prevalence.

The attack rate per 1,000 of the population in 1908 was 7.8, compared to 3.3 during 1907. In spite, however, of its increased prevalence, the number of deaths did not exceed that of the previous year, viz., 5, and the death-rate, 0.05, was exactly the same as in 1907 and 1906. In the country generally the death-rate was 0.08 ; and in the 76 great towns 0.10 ; in the 142 smaller towns 0.06 ; and in rural England and Wales 0.06. Northampton's figure is again below any of these.

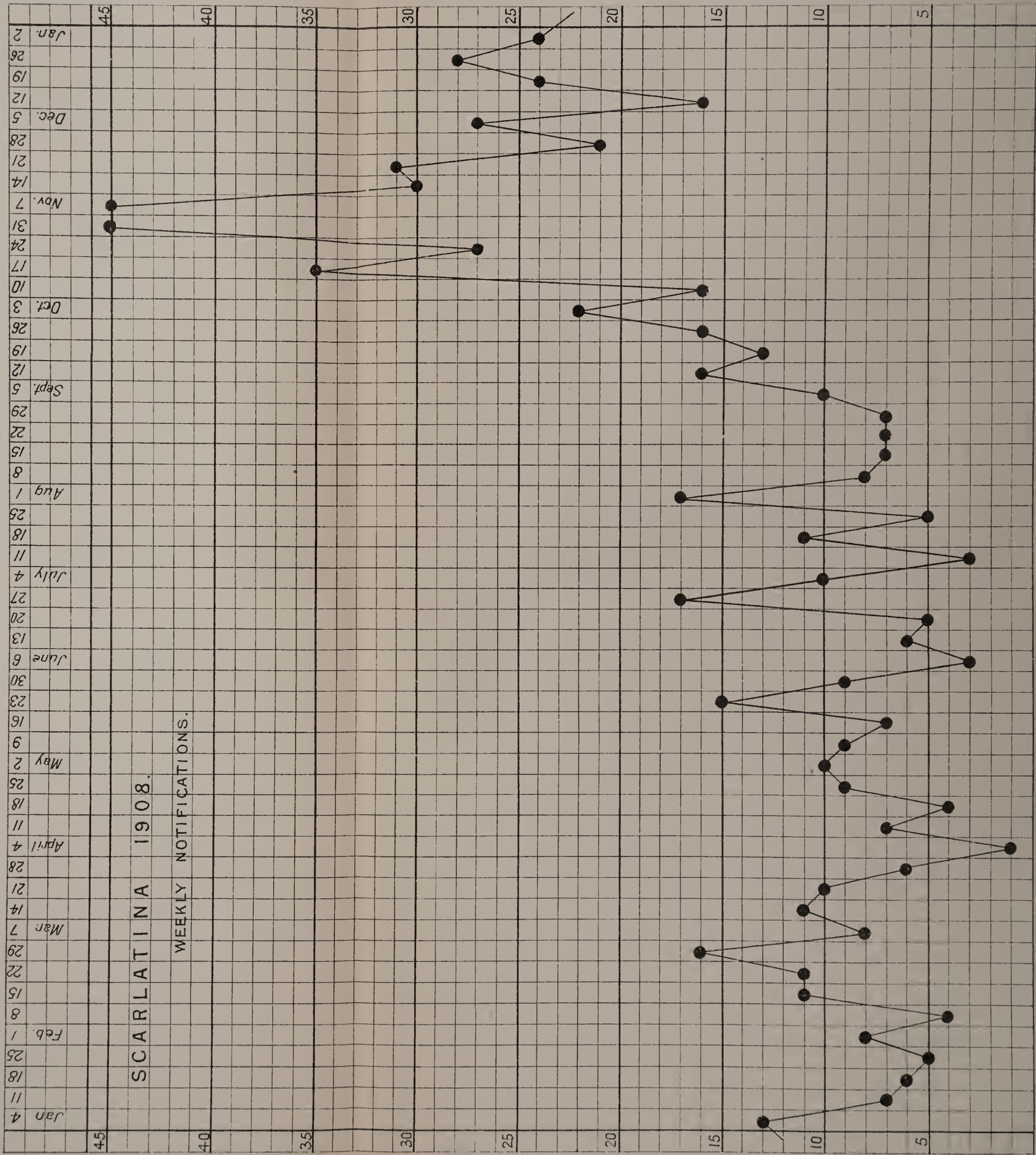
When we compare the fatality of the disease, however—that is the number of deaths per 100 of the cases notified—we find that the disease was of a remarkably mild type, as only 0.7 per cent. of the cases died. I have no record showing so low a fatality from this disease in the town. It has been the experience of all epidemiologists that the fatality from scarlatina is vastly different from what it was 20 or even 10 years ago, and recently this disease has been looked upon as a remarkably mild one, and not to be compared with measles as a dangerous infectious disease.

The age of incidence of scarlet fever during 1908 was as follows :—

Under 1 year.	1 to 5	5 to 15.	15 to 25.	25 to 65.	65 and over.
4	216	447	48	16	—

MONTHLY TABLE.

Month.	Notifica- tions.	Removed to Hospital.	Percentage removed.
January	30	28	93.3
February	43	38	88.4
March	36	22	61.1
April	28	21	75.0
May	42	30	71.4
June	35	27	77.1
July	40	33	82.5
August	35	24	68.6
September	65	54	83.1
October	131	61	46.6
November	137	53	38.7
December	109	60	55.0
YEAR	731	451	61.7



The monthly table, as well as the accompanying chart, will indicate quite as definitely as those given for 1907 the seasonal variation in the incidence of the disease. The marked excess of the cases during the later months is very clearly demonstrated, as was this in the preceding year. 421 cases (or 61.7 per cent. of the cases notified) were removed to the hospital. In 1907 72.3 per cent. were thus dealt with. Two further cases were treated in the hospital during the year, but these were from districts outside the borough.

Scarlatina has always been recognised as a disease which attacks children, mostly during the earlier years of school life, and thus, as a rule, the majority of the cases notified is found in children attending school. In 1908, out of the 731 notifications, 448 were found to relate to children attending our public elementary schools. This shows that 61 per cent. of the cases occurred amongst these school children. In 1907 the figure was 68 per cent. Careful note was taken of the particulars of the onset of the illness in relation to the last school attendance, in each case following notification, and from this information it appeared that as a general rule school attendance was not responsible for the prevalence of the disease to any great extent.

In three localities, however, during the last quarter of the year, there was a somewhat abnormal prevalence of the disease in connection, at least in part, with the neighbouring schools. In each case a careful examination of the attendance registers indicated the fact that some children had recently been absent, presumably on account of colds, for a few days, but had again returned seemingly quite well. Further investigation led to the detection amongst these of unrecognised mild cases of scarlatina, and their immediate exclusion was soon followed by a perceptible decline in the local prevalence of the disease, which was completed in all probability by the Christmas holiday closure of the schools, which came about soon afterwards. During the holiday occasion was taken to thoroughly cleanse the schools, under the supervision of the Health Department. These circumstances in connection with the local prevalence were at the time reported to the Sanitary Committee.

The teachers are warned daily from the Health Office of the occurrence of cases of any of the notifiable infectious diseases in households from which children are attending school, and are asked to prohibit the attendance of these children until the maximum incubation period of the disease has elapsed after the completion of disinfection.

The distribution of the disease in the various wards is indicated by the next table:—

WARD.	Cases.	Case Mortality per cent.	Death-rate per 1,000.
St. Michael	119	0.84	0.07
Castle	55	1.82	0.10
St. Crispin	87	1.15	0.09
South	39	...	...
North	84	1.19	0.07
Kingsthorpe	97	...	...
St. James	114	0.88	0.11
Far Cotton	64	...	...
St. Edmund	72	...	...

WHOOPING COUGH.—This disease was prevalent in the town during 1908, although the actual number of cases notified from the schools was not so great. The number of deaths was 28 ; more than double that of 1907, and higher than any year since 1903. The death-rate was, therefore, 0.29, which has not been equalled since 1903, when the death-rate was 0.36. As in the case of measles, the number of deaths registered as due to whooping cough is no criterion of the prevalence of the disease in the town, as the effect of season, especially when we take into account the chest complications of the disease, has a marked influence on its fatality. During 1908 the deaths occurred mostly in the winter and spring months, and consequently a greater number of deaths was to be expected, even though the disease was not so prevalent as during the previous year.

Whooping cough is not compulsorily notifiable, and, as in the case of measles, I have no means of gauging its prevalence otherwise than through the notifications from the school authorities. When such cases are notified the households in which they occur are visited, and if no medical practitioner is in attendance advice is tendered, when necessary, and a leaflet recommending care and isolation is left. In many cases, however, it is advised that medical attendance should be procured.

The figures showing the notifications from the schools are shown in the next table:—

TABLE OF DEATHS AND DEATH-RATES FROM WHOOPING COUGH
DURING THE LAST ELEVEN YEARS.

Year.	Notifications from schools.	Deaths.	Death-rate per 1,000.
1896	...	12	0.20
1897	...	63	1.03
1898	...	12	0.20
1899	...	11	0.18
1900	...	18	0.29
1901	...	37	0.42
1902	...	25	0.28
1903	...	32	0.36
1904	65	4	0.04
1905	165	22	0.24
1906	51	8	0.09
1907	269	12	0.13
1908	189	28	0.29

DIARRHŒA.—There were 18 deaths registered as due to diarrhœa during the year, and the death-rate is calculated as 0.19 per 1,000.

This is an improvement on the figures for 1907, in which year the deaths numbered 23, and the death-rate was 0.25. The deaths from enteritis are not included, and these figures refer only to such deaths as are specifically registered under the term “diarrhœa.”

Year.	Deaths from Diarrhœa.	Diarrhœa Death-rate.	Deaths from Enteritis and allied Diseases.	Total.	Diarrhœa and Enteritis Death-rate.
1897	50	0.82	16	66	1.08
1898	71	1.16	5	76	1.24
1899	57	0.93	...	57	0.93
1900	33	0.54	...	33	0.54
1901	79	0.91	26	105	1.21
1902	32	0.36	26	58	0.66
1903	30	0.33	23	53	0.59
1904	84	0.93	13	97	1.08
1905	26	0.28	30	56	0.61
1906	54	0.59	40	94	1.03
1907	23	0.25	19	42	0.45
1908	18	0.19	16	34	0.36

In the Local Government Board tables at the end of the report it is indicated, in connection with Table IV., how the deaths from these two and

from diarrhœal diseases generally are to be classified, but in order that a comparison with figures of previous years may be made, the deaths from diarrhœa and from allied diseases have been separated in this part of the report, and consequently the preceding table can be presented.

The number of deaths and the death-rate from diarrhœa alone fall below the corresponding figures for any year on record, and the number of deaths from the whole group of diseases is less than in any year since 1900, while if the death-rate from these combined diseases is taken it is found that it has not reached so low a figure for at least 15 years. Less than one-ninth of the total infant mortality was due to this group of diseases.

The Registrar General states in his fourth quarterly report for 1908 that the death-rate in England and Wales from diarrhœa was 0.50 ; in the 76 great towns, 0.65 ; in the 142 smaller towns, 0.52 ; while in the rural districts it was 0.33. The Registrar General, however, does not adopt the same classification as is done in this part of the report, and his calculations seem to be based on the figures given in Table IV. inserted at the end. Calculated on this latter basis the death-rate from epidemic diarrhœal diseases is 0.30 per 1,000 of the population of Northampton. The conditions found in Northampton as regards epidemic diarrhœa during 1908 approximated more nearly to the conditions of a rural district than to a similar urban area. There is no doubt that our meteorological conditions during the year were in favour of a low incidence of this disease, nevertheless, as can be seen from the meteorological table on page 67, they differ only slightly for the whole year from those of the preceding year. The rain-fall was slightly less, and the number of days on which rain fell was less. The mean temperature was a very little higher. The maximum temperature was higher, and occurred later in the year and nearer that season of the year when one expects the greatest prevalence of the disease. The nights, however, were as a rule colder. It is a point of note that when the conditions of the third quarter of the year are separated the total rainfall was 8.27 inches, and the number of days on which rain fell was 43. If we compare this with the 4.73 inches, and 38 days, in 1907, we find that the climatic conditions in that part of the year in which the greatest mortality occurs were distinctly to our advantage during 1908. The figures are too small to be of any value in indicating the climatic effect, as the greatest number of deaths per week was only four, and the addition or subtraction of one death in a week's total might make a difference of 50 per cent. in the weekly mortality.

The usual investigations were carried out during the year in reference to the deaths of infants under one year from diarrhœal diseases, but it unfortun-

ately happened that during the months of July, August, and the greater part of September, we were without a health visitor, as the previous official had left in June, and the present one did not take up her duties until the middle of September, consequently the work of investigation had to be taken up by the male Inspectors, in addition to their other duties, and it was hardly possible to get the same precision of detail as one would expect from a special investigator. Thirty-four deaths were recorded, and of these 21 were in infants. In addition to the deaths under one year of age certified as due to diarrhœa and enteritis, there were five others in which diarrhœa was found to be the principal symptom and probably the immediate secondary cause of death. Thus 26 deaths of infants out of a total of 198 were almost certainly due to diarrhœa. This gives a percentage of 13.1, in contrast to 15.7 in 1907, and 33 in 1906. Two of these 26 deaths were not investigated, and the next table gives the summary of certain facts connected with the remaining 24:—

TABLE OF CIRCUMSTANCES OF INFANTS DYING OF DIARRHŒA AND ALLIED DISEASES DURING 1908.

				Jan. to June.	July.	Aug.	Sept.	Oct. to Dec.	TOTAL.
FEEDING.	Breast	...	...	2	2	1	...	...	5
	Breast, later spoon...	bottle	or	1	...	5	4	2	12
	Bottle	...	...	2	...	5	...	...	7
TOTAL				5	2	11	4	2	24
BOTL. USED.	Long-tube	...	...	...	...	7	3	2	12
	Boat	...	...	3	...	1	...	...	4
	Both	...	...	...	...	2	1	...	3
Milk, boiled				2	...	10	2	1	15
PHYSIQUE.	Good	...	...	1	...	4	2	...	7
	Fair	...	...	1	1	2	1	2	7
	Poor, puny, or small	...	...	3	1	5	1	...	10
HOUSE.	Clean	...	...	5	2	8	3	2	20
	Dirty	...	...	...	...	3	1	...	4
	Comfortable	...	...	1	1	7	2	2	13
	Poor	...	...	4	1	4	2	...	11

DIPHTHERIA AND MEMBRANOUS CROUP.—1897—1908.

Year.	Popu- lation.	Notifica- tions.	Attack Rate per 1,000.	Deaths.	Death- rate per 1,000	Case Mortality per cent.	Zymotic Death-rate per 1,000.	General Death- rate.	Removed to Hospital.	Percentage Removed.
1897	61102	11	0.18	1	0.02	9.1	2.7	17.0	...	0.0
1898	61117	21	0.34	2	0.03	9.5	2.2	16.2	4	19.0
1899	61132	16	0.26	2	0.03	12.5	1.5	15.0	...	0.0
1900	61147	16	0.26	6	0.10	37.5	1.6	15.5	1	6.2
1901	87021	23	0.26	9	0.09	39.1	1.9	13.9	3	13.0
1902	88206	28	0.32	11	0.12	39.3	1.5	14.7	2	7.1
1903	89960	39	0.43	18	0.20	46.1	1.3	13.5	3	7.7
1904	90340	48	0.53	9	0.10	18.7	1.5	13.1	13	27.1
1905	91230	31	0.34	14	0.15	45.2	1.0	12.7	6	19.3
1906	91640	28	0.31	7	0.08	25.0	0.9	11.6	9	32.1
1907	92750	28	0.30	5	0.05	17.8	0.9	12.4	19	67.9
1908	93760	26	0.28	4	0.04	15.4	0.8	12.0	16*	61.5

*Removed to the General Hospital, 9. Removed to the Borough Hospital, 7.

DIPHTHERIA AND MEMBRANOUS CROUP.—Judged by the figures in the accompanying table, diphtheria is not a very prevalent local disease, though the tendency has been towards a slight increase of late years. There were only 26 notifications received during the year, a sickness rate of 0.28 per 1,000 of the population, and four deaths were registered, which gives a death-rate of 0.04. Such a low death-rate has not been reached since before the borough was extended. The annual average death-rate for the ten years 1898 to 1907 was 0.09. The Registrar General gives the death-rate for England and Wales in 1908 as 0.15, and for the 76 great towns as 0.16, so that again our rate compares favourably with his.

Whilst it would thus appear that there is comparatively little diphtheria amongst us, it is otherwise when we come to consider how fatal that little is. Four deaths out of the 26 cases notified gives a fatality of 15.4 per cent., and even this, though it indicates that close on one-sixth died, has not been so low since 1899. A glance at the figures for the last ten years will show that over 30 per cent., or not far off one-third of our diphtheria patients, died during that period, and even in the last five years the proportion is about a quarter. No doubt we are showing some improvement even in this direction, but I still think that this disease is more fatal than it should be in these days of anti-toxin treatment and facilities for bacteriological aid in diagnosis. In only three instances, none of them in households in the town, was there any evidence of infection from person to person. One occurred at the General, and one at the Borough Hospital, while the third was amongst the occupants of a van in the Fair Ground. The reason for the outbreak in each of the other cases was never discovered.

Seven cases were treated in the Borough Hospital, and nine in the General Hospital. Of these nine, two belonged to the staff and one came from the county, while most of the others were removed in great haste, presumably for operation. There were thus 61.5 per cent. of the cases treated in hospital, compared with 67.9 per cent. in 1907.

TYPHOID FEVER.—Thirty-three cases of this disease were notified, but as three did not belong to Northampton the attack rate was 0.32 per 1,000 of the population. Five deaths occurred, so that the death-rate was 0.05 per 1,000. A comparison with the figures for recent years can easily be made by referring to the accompanying table. In estimating the attack rate and percentage removal figures I have not included the three cases referred to above, which came into Northampton for hospital treatment from districts outside. Nor are they reckoned in calculating the case fatality.

TYPHOID FEVER. 1897—1908.

Year.	Popu- lation.	Notifica- tions.	Attack Rate per 1,000.	Deaths.	Death- rate per 1,000.	Case Mortality per cent.	Zymotic Death-rate per 1,000.	General Death- rate.	Removed to Hospital.	Percentage Removed.
1897	61102	28	0.46	7	0.11	25.0	2.7	17.0	1	3.6
1898	61117	36	0.59	4	0.65	11.1	2.2	16.2	16	44.4
1899	61132	46	0.75	11	0.18	23.9	1.5	15.0	22	47.8
1900	61147	69	1.13	17	0.28	24.6	1.6	15.5	44	63.7
1901	87021	70	0.80	13	0.14	18.6	1.9	13.9	40	57.1
1902	88206	63	0.71	17	0.19	26.9	1.5	14.7	33	52.3
1903	89960	25	0.28	6	0.07	24.0	1.3	13.5	7	28.0
1904	90340	30	0.33	...	...	...	1.5	13.1	8	26.6
1905	91230	23	0.25	1	0.01	4.3	1.0	12.7	13	56.5
1906	91640	34	0.37	10	0.11	29.4	0.9	11.6	22	64.7
1907	92750	38	0.41	3	0.03	7.9	0.9	12.4	29	76.3
1908	93760	33†	0.32	5	0.05	16.6	0.8	12.0	22*†	63.3

{

 *14 Cases removed to the Borough Hospital.

 6 Cases removed to the General Hospital

 2 Cases removed to the Workhouse Infirmary.

 }

 †3 of these cases came from outside districts for treatment at the General Hospital or Workhouse Infirmary, and are not reckoned as Northampton cases in calculating the rates.

During the ten years ending 1907 the average annual attack rate was 0.56, and the death-rate 0.17 per 1,000 of the population, while the average annual case fatality was 18.9 per cent. of the cases notified. The similar statistics for 1908 therefore compare very favourably with these, as they do with the Registrar General's death-rates for the whole country, 0.07; for the great towns, 0.08; for the smaller towns, 0.08; and the rural districts, 0.07.

Although the incidence of the disease was lower than in 1907, its fatality was about twice as great, though less than the annual average for the previous ten years.

In the report for 1907 it was stated that the greatest prevalence during that year was in the month of December, when 29 per cent. of the total cases were notified. This prevalence was continued without break into the two earlier months of 1908, half the total cases for the latter year occurring during January and February.

I made personal investigations in each case, especially at that time, to discover, if possible, any common source of infection which might determine this more than usual prevalence, but I was unable to find anything other than personal infection. This came in more than one instance from a previously unrecognised case, and the liability to spread was undoubtedly enhanced often by defective drainage and insanitary home conditions.

In a house in Brook Street four cases occurred, in the first of which, notified in December, 1907, the disease was not suspected till the infection was caught by the other three. In Marlborough Road a man developed the disease about the end of 1907, and was nursed by his mother and sister before the true nature of the disease was suspected. Both developed the disease within five or six weeks.

In this way several small foci of the disease showed in December, 1907, and January, 1908, but no connection could be obtained between any two such foci. About the middle of February the number of the cases dropped, and since then till the end of the year only 17 were notified, of which three were stated above not to belong to the town. Three others, although amongst borough residents, became infected from sources outside the town, while three were found on further experience not to be cases of typhoid fever. This leaves only eight cases presumably of genuine typhoid fever infected, so far as could be made out, in Northampton after the middle of February in 1908.

Of the 30 borough cases notified, 19 (or 63.3 per cent.) were treated in hospital; 14 in the Borough Hospital, four in the General (not including

two from outside the town), and one in the Workhouse Infirmary (in addition to a tramp who came from Bedford with the disease).

Localities in which cases of typhoid fever occurred during 1908:—

†Adelaide Street.	†Mayorhold.
†Bath Street (2 cases).	Melville Street.
†Brook Street (3 cases).	†Queen's Road.
*Byron Street.	†Roe Road.
†Castle Street.	St. Andrew's Street.
Clarke Road.	St. Edmund's Street.
†Francis Street (2 cases).	†St. Paul's Terrace.
*General Hospital (3 cases).	†Tanner Street.
Ivy Road.	†Uppingham Street.
Lawrence Street.	*Weston Row.
Kingswell Street.	†Workhouse.
*Kingswell Terrace.	Wycliffe Road
Marlborough Road (3 cases).	

*Removed to General Hospital—6 cases.

†Removed to Borough Hospital—14 cases.

‡Removed to Workhouse Infirmary—2 cases.

PUERPERAL FEVER.—Ten cases of puerperal fever and six deaths came to the knowledge of the Department in 1908. The death-rate was 0.1 per 1,000. The prevalence was twice as great as in 1907, and the disease was equally fatal.

PUERPERAL FEVER, 1901—8.

Year.	Cases.	Deaths.	Fatality.
			PER CENT.
1901	7	7	100
1902	4	3	75
1903	5	2	40
1904	4	...	...
1905	1	...	...
1906	2	2	100
1907	5	3	60
1908	10	6	60

The number of deaths is in the proportion of one in every 340.5 registered births. If to these deaths we add four others classified as due to diseases and accidents of childbirth, then the deaths which were attributed by the practitioners in attendance directly or indirectly to childbirth were in the proportion of one in every 204 live births registered. This proportion is too high, as it does not take into account the number of still births which are not

registered. Five of the cases of puerperal fever notified occurred in the practice of midwives, and three of these died.

MIDWIVES' ACT 1902.—There were, as in the previous year, eleven registered midwives who intimated their intention to practice in Northampton during 1908. Eight of these had been in *bona fide* practice before the passing of the Act, two possessed the L.O.S. diploma, and one qualified since the Act came into force. Most of them, however, carry on a very limited practice, and, as in former years, this was no doubt one of the principal reasons why so few sent in the required notifications of abnormal conditions. Such notifications were received from six midwives, and comprised the following:—57 records of sending for medical help, 47 notifications of still birth, and 11 notifications of the death of a feeble or premature child. No intimations of the death of a mother were received. The attendant circumstances in most instances were enquired into.

Two midwives were reported by me, as Executive Officer, to the Local Supervising Authority. A midwife (Reg. No. 5,793) was in attendance at a confinement at the married quarters of the barracks. A day or two afterwards a case of Scarlatina occurred in her practice, which she at once reported, and temporarily gave up her entire practice. She arranged with another midwife in the town to take on this case at the barracks. The second midwife (Reg. No. 5,478), although admitting subsequently that the patient showed signs of acute illness, did not call in medical aid, and did not report the circumstances. The husband of the woman summoned the Medical Officer in command of the Military Hospital, who, after consultation with a civilian medical colleague, notified that the woman was suffering from a septic puerperal condition, and reported the circumstances. The woman subsequently died. After going into all the particulars with the medical men and both the midwives, I reported that in my opinion the former midwife could not be held to blame for her part of the case, but that the latter had acted in a culpably negligent and ignorant manner. This latter midwife had been in the previous year reported by my predecessor, and the particulars were published in the report for 1907. The Local Supervising Authority considered that a *prima facie* case was hardly made out in the face of the complicated circumstances, and instructed me to reprimand the midwife.

The second case occurred at the end of the year, in December, and was not actually reported till the beginning of the present year (1909). As at the time of writing the case is not completed, having been reported to the Central Midwives' Board, I shall not report here more fully, in view of any action which may be pending on the Board's part.

THE SUBJOINED TABLE GIVES THE NUMBER OF DEATHS IN EACH YEAR BOTH ZYMOTIC AND GENERAL, FOR THE 25 YEARS 1884 TO 1908, AND

	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894
Smallpox ... ..	...	...	...	...	...	...	...	...	...	...	...
Measles	3	72	31	35	4	57	11	35	14	52	20
Scarlatina	11	6	24	38	22	15	4	1	2	3	5
Diphtheria or Mem- branous Croup ...	9	3	5	2	2	1	...	4	2	5	3
Whooping Cough ...	9	49	27	34	8	43	17	25	14	28	31
Fever	12	4	3	7	7	4	1	5	5	5	6
Diarrhœa	133	31	55	62	32	55	61	36	21	62	19
Deaths from the seven Zymotic Diseases	177	165	145	178	75	175	94	106	58	155	84
Total Deaths ...	999	1064	996	1025	963	1062	1080	1133	962	1070	908
Death-rate from the seven Zymotic Diseases per 1,000	3.2	2.9	2.5	3.1	1.2	2.9	1.5	1.7	0.9	2.5	1.4
General Death-rate	18.2	19.1	17.6	17.8	16.5	17.9	17.9	18.5	15.7	17.5	14.8

FROM THE SEVEN PRINCIPAL ZYMOTIC DISEASES, AND THE DEATH-RATES,
THE ANNUAL AVERAGE FOR THE DECENNIAL PERIOD 1899 TO 1908.

Borough extended.

1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	Average for 10 years. 1899-1908
...	...	...	...	...	...	...	...	...	1	...	...	...	...	0.1
1	114	2	33	1	21	5	43	10	1	15	...	29	3	12.8
4	4	41	15	11	3	3	2	24	40	16	5	5	5	11.4
6	2	1	2	2	6	9	11	18	9	14	7	5	4	8.5
8	12	63	12	11	18	37	25	32	4	22	8	12	28	19.7
7	1	7	4	11	17	13	17	6	...	1	10	3	5	8.3
67	35	50	71	57	33	79	36	30	84	26	54	34	28	46.1
93	168	164	137	93	98	146	134	120	139	94	84	88	73	106.9
913	979	1042	995	921	951	1216	1294	1219	1185	1159	1061	1151	1131	1128.8
1.5	2.7	2.7	2.2	1.5	1.6	1.9	1.5	1.3	1.5	1.0	0.9	0.9	0.8	1.2
14.9	16.0	17.0	16.2	15.0	15.5	13.9	14.6	13.5	13.1	12.7	11.6	12.4	12.0	13.4

Each midwife during the year was visited and her books and apparatus inspected at least twice. Some were found carrying out their duties in a conscientious and fairly satisfactory manner, but others, though trying their best were too old, and generally too ignorant, to make anything like ideal practitioners. Fortunately the practices of most of the latter were very limited indeed. Besides these visits of inspection, a number of interviews with different midwives was held at the Public Health Office.

THE BOROUGH HOSPITALS.

(1) **The Smallpox Hospital, Hardingstone.**—This hospital, situated outside the borough, in the Hardingstone Rural District, was erected in 1900, and is always kept in readiness by regular cleansing and airing twice each week. No cases were admitted during 1908, as the disease was entirely absent from the town. The following table indicates the use this institution has been put to since its erection:—

SMALLPOX HOSPITAL.

Years.	Cases.	Years.	Cases.
1900	...	1905	2
1901	...	1906	...
1902	2	1907	...
1903	38	1908	...
1904	4		

Only those who know what possibilities may arise from an outbreak of smallpox in so badly a vaccinated community as Northampton can appreciate the absolute necessity of keeping the smallpox hospital, no matter at what expense, in a constant state of expectancy. In my opinion, it is a poor substitute for efficient vaccination and re-vaccination.

(2) **Harborough Road Hospital, Kingsthorpe.**—This institution is also situated outside the boundary in the Brixworth Rural District, on the opposite side of the town to the smallpox hospital. It has accommodation, as already explained in dealing with phthisis, entirely separated from the main portion, for consumptive cases in the later stages. The work done in

this connection has already been detailed. Besides the phthisis wards, there is accommodation for cases of scarlatina, diphtheria and typhoid fever, and the next table shows statistics of the work done in this latter respect :—

BOROUGH HOSPITALS. INFECTIOUS DISEASES, 1908.

Disease.	No. in Hospital at beginning of the Year.	No. Admitted.	No. Discharged.	No. Died.	No. remaining at end of Year.
Scarlatina ...	66	453*	417*	6	96
Enteric Fever ...	...	14	13	1	...
Diphtheria ...	...	8†	8†	...	...
TOTAL ...	66	475	438	7	96

*One case from outside the Borough and one nurse from the hospital which is also outside the borough, not included in notifications.

†One case, that of a nurse in the hospital, which is outside the borough, not included in list of notifications.

At the end of the previous year (1907) there were remaining in hospital 66 cases, and hence during 1908 there were under treatment for a longer or shorter period 541 patients. 96 of these were left at the end of the year, and of the remainder who completed their terms of isolation 7 (or 1.6 per cent.) died, and 438 were discharged. There were similarly 541 scarlatina cases under treatment, 96 of which remained after the year closed. Of those, the treatment of which was completed, 6 (or about 1.4 per cent.) died. 14 cases of typhoid fever were treated, with 1 death, slightly over 7.1 per cent. fatality.

No diphtheria cases died. The fatality from scarlet fever is light compared with that of previous years ; only twice during the last 15 years has it shown a lower figure, as the following table shows :—

FATALITY PER CENT. OF SCARLATINA AT THE HOSPITAL DURING EACH YEAR SINCE 1894.

1894	...	1.0	1899	...	3.0	1904	...	1.1
1895	...	3.6	1900	...	2.8	1905	...	1.4
1896	...	2.6	1901	...	1.7	1906	...	2.4
1897	...	4.1	1902	...	1.6	1907	...	3.2
1898	...	2.5	1903	...	2.4	1908	...	1.4

Admissions from the various wards, 1908:—

	TYPHOID				TOTAL.
	SCARLATINA.	FEVER.	DIPHTHERIA.		
St. Michael	... 73	... 1	... —	...	74
Castle ...	... 40	... 3	... 1	...	44
St. Crispin	... 56	... 1	... —	...	57
South ...	... 28	... —	... 3	...	31
North ...	... 64	... 9	... 1	...	74
Kingsthorpe	... 58	... —	... 1	...	59
St. James	... 64	... —	... —	...	64
Far Cotton	... 20	... —	... 1	...	21
St. Edmund	... 48	... —	... —	...	48
	—	—	—		—
BOROUGH	... 451	... 14	... 7	..	472
	—	—	—		—

Yearly admissions to the Borough Hospital since 1892:—

YEAR.	TYPHOID			TOTAL FOR YEAR.
	SCARLATINA.	FEVER.	DIPHTHERIA.	
1892	126	11	1	138 + 2 (smallpox)
1893	66	...	...	66 + 47 „
1894	200	4	2	206
1895	140	10	1	151
1896	165	12	1	178
1897	438	1	...	439
1898	322	16	4	342
1899	232	23	...	255
1900	71	44	1	116
1901	115	41	6	162
1902	124	35	15	174
1903	410	7	14	431
1904	717	...	...	717
1905	436	4	...	440
1906	207	20	4	231
1907	227	15	2	244
1908	453	14	8	475
	—	—	—	—
TOTALS	4449	257	59	4814
	—	—	—	—

(3) **The Welford Road Hospital.**—This institution, also in the Brixworth Rural District, as explained in the Annual Report for 1907, had been set

apart during most of 1906 and 1907 for the isolation of phthisis cases, now transferred to the special wards at Harborough Road. During the first nine months of 1908 it was kept ready as an overflow hospital to accommodate convalescent cases of scarlatina sent from Harborough Road in epidemic seasons of this disease. On October 19 it was found necessary to open this hospital as the number of cases was rapidly increasing, and it was kept in constant use and mostly fully occupied all the rest of the year. Accommodation can be found for 30 cases and the requisite staff if only convalescents are sent. The annexed table gives the number of cases treated up till January 2, 1909 (the end of the statistical year). These figures are included in and covered by those already given in connection with the larger hospital.

WELFORD ROAD HOSPITAL. SCARLATINA CASES, 1908.

Number admitted since opening	...	...	...	72
„ discharged „	...	...	...	51
„ died „	...	...	...	1
„ remaining at end of year	...	...	...	20

CLINICAL WORK.—**TYPHOID FEVER.**—14 cases notified as typhoid fever completed their term of treatment during 1908. Five were males, and nine females. It is interesting to note that 10 of the 14 were admitted within the first 35 days of the year, two more followed before the middle of April, and the thirteenth in the beginning of June, and hence only one case in the last seven months of the year. Two of the fourteen turned out not to be cases of typhoid fever, and after remaining a short time under observation were discharged apparently well. One case died on the tenth day after admission of severe intestinal hæmorrhage. This gives a fatality of 7.1 per cent., but if reckoned on the number of genuine cases only, of 8.3 per cent. The average length of stay of the eleven genuine cases which recovered was 59.5 days. In only one case was there a genuine relapse.

DIPHTHERIA.—Eight cases of this disease were under treatment during the year. One of them occurred in a nurse at the hospital, and as this institution is situated outside the borough the case was not notified in, and never came within the confines of the town, and hence is not found in the number of notified cases removed. It was a typical case, apparently infected from one of three patients under the nurse's charge. The clinical symptoms were mild, but the bacteriological evidence was definite. Two of the other cases admitted, one from the Barracks, were stated to have had

the diagnosis confirmed bacteriologically before admission, but no such confirmation could be got in spite of repeated attempts after admission. The other five were admitted on clinical evidence only, which was confirmed only in one case in the laboratory. Five cases were treated with antitoxin. All the eight made good recoveries, and were free from the bacilli before discharge. The average length of stay was 23.2 days.

SCARLATINA (Harborough Road and Welford Road Hospitals).—In considering the clinical history of the cases of this disease only those are taken into consideration, the period of isolation and treatment of which was completed within the year. Thus, 453 cases were admitted, and 66 cases remained in hospital to complete their treatment from the previous year. This gives a total of 519, but of these 96 remained after the end of the year. These 96 are therefore not considered in this part of the report, so that the total number of cases included is only 423. Of these 423 patients there were 32 who never showed any definite signs of the disease after admission, a percentage of nearly 7.5.

Scarlatina in its milder forms is perhaps one of the most difficult of diseases to diagnose with accuracy, yet very frequently much depends upon this accuracy considering the infectious nature of the disease.

Six cases died. Three of these were admitted from the General Hospital, having come previously thither from the county, and each was suffering from another disease at the time scarlatina set in. Two died within a few hours of admission, while the third died on the fifth day. Three cases admitted from the town died, one from scarlatina anginosa; one was found on admission not to be suffering from scarlatina, but almost immediately took the disease in a virulent form, and died of septicæmia. The third developed tuberculous meningitis during convalescence at Welford Road Hospital. The disease seemed to have existed previously in a latent form, which became manifest after the acute scarlatinal attack. This case died on the 61st day after admission.

Ten patients showed almost certain evidence of a genuine reinfection during their stay in hospital. That is to say, they underwent a second attack during the convalescence from the first. Careful notes were taken in each case of each separate attack, and though the proportion may be considered unusually large (2.3 per cent.), yet the evidence seemed to me in each case conclusive. One or two doubtful cases are not included in this number.

Nine cases on admission were suffering from some other definite disease apart from the scarlatina, *e.g.*, burns (2 cases), gastritis, psoas abscess, tertiary syphilis, dilated stomach, tuberculous abscess, membranous dysmenorrhœa, and psoriasis. Five of these came from the General Hospital. Measles was introduced on one occasion, but only one other patient caught the disease. Chickenpox was also introduced, but did not spread.

The average number of days in hospital of those cases which recovered was 51.45, and of those which died 17.8.

The following list gives the incidence of the major complications noted amongst the 423 cases which completed their treatment during the year:—

BOROUGH HOSPITAL, 1908, (SCARLATINA).

Complications.	Cases.	Per cent.
Otorrhœa (right)	21	4.6
„ (left)	25	5.5
Rhinorrhœa	22	4.8
Adenitis	18	3.9
Glandular Abscess	3	0.7
Mastoid Abscess	1	0.2
Arthritis	10	2.2
Albuminuria	20	4.4
Nephritis	4	0.9
Secondary Sore Throat	2	0.4
Relapse (reinfection)	10	2.2
Other	3	0.7
TOTAL	139	30.7

BACTERIOLOGY.—The assistance of this branch of preventive medicine has been available at the public expense for some years, and it has generally been found of great use in certain circumstances. As an aid to clinical diagnosis it is, if the reports are intelligently interpreted, invaluable, and it is to be regretted that it is not taken advantage of to a greater extent by medical practitioners in the town. It is also an additional safeguard for the purity of the water and the food supply. 49 bacteriological reports have been received on specimens sent for examination during the year to the Lister Institute of Preventive Medicine, and the Laboratories of Pathology and Public Health. 29 reports—8 positive, and 21 negative—in connection with 13 cases, or supposed cases, of diphtheria were received, and evidence of the existence of the disease germs was found in four cases. The Widal test for typhoid fever was made in three instances in connection with 3 probable cases of this disease, and in two a positive result was reported. The sputum in 11 supposed cases of phthisis was submitted on 15 occasions, but the bacilli of this disease were found only in 6 cases.

Bacteriological reports were received directly by the Health Department on two samples of the town water supply, and the Water Engineer received one report on water taken at the reservoir. These latter are mentioned in detail below.

WATER SUPPLY.—Since 1884 the water supply has been provided directly by the Corporation. The two main sources from which Northampton derives its water supply are the Reservoir at Ravensthorpe, about 7 or 8 miles outside the Borough, and the well on the Billing Road, which is within the Borough boundaries.

The Ravensthorpe Reservoir.—This reservoir receives the surface water from a gathering ground of about 3,000 acres. This ground is mainly under grass, but is in part cultivated. The population within its boundaries numbers about 100, and arrangements have been made to deal with the sewage from this population. The collection of the water in a large reservoir forms a great protection against danger from a gathering ground of this type, as the action of the sun, of the air, and of the living inhabitants of the water, has a purifying effect if allowed time to exert its influence. In addition, however a number of filters is provided, through which the water passes before reaching the town, and the result is a water of a fair standard of purity. The reservoir when full contains about 400,000,000 gallons, and of this I understand, about 40,000,000 gallons would not be available for supply.

I am informed that the reservoir contains when full, at the present rate of consumption, about 250 days' supply. I have inspected the gathering grounds, and at the time of my visits I found that every reasonable precaution was being taken to ensure the supply of a water safe for drinking purposes.

Billing Road Well.—This is a “ deep ” well, penetrating about 150 feet of impervious clay to reach the water-bearing stratum, from which it derives its supply. The total depth of the well is 172 feet. The water is pure, but somewhat hard, but by mixing it with the water from the Ravensthorpe reservoir a reasonably satisfactory drinking water is produced.

Water Analysis.—Samples of the town water were taken on three different occasions during the year for bacteriological analysis, two from taps in the town, and one from the pure water tank at the reservoir. One of these was submitted to the Lister Institute of Preventive Medicine, and the other two to the Laboratories of Pathology and Public Health, London. The report from the former laboratory, which was on a sample taken from a tap in the town during August, did not show the presence of typical bacillus coli. The remarks of the bacteriologist on this sample are as follow :

“ The number of organisms contained in 1 c.c., and developed at 22° is unusually high for a tap water. The number of those growing at 37° from 1 c.c. is, however, not excessive, and in view of the fact that atypical B. Coli was not found in less than 5 c.c. of the sample, while typical B. Coli was not obtained from the whole sample, the water may be considered as of fair average quality.”

The report on another sample, taken during September, also from a tap in the town, showed that no B. Coli were found in any quantity of the water up to and inclusive of 60 c.c. Streptococci were present once in every 30 c.c. of the water. The bacteriologist remarks “ a fairly good sample, safe for drinking and domestic purposes.” The sample taken from the reservoir did not show the presence of B. Coli or Streptococci in any quantity of the water up to and inclusive of 60 c.c. The remarks are : “ The number of blood-heat organisms is higher than a pure water should contain, but from the bacteriological standpoint the supply is quite safe for drinking and domestic purposes.”

The results of these analyses show that while on the whole our water supply is satisfactory, great care must be taken that none of the means adopted to ensure purification should be allowed to get out of working order. So long as these are efficient protection from dangerous contamination should be secure, provided constant watchfulness is maintained.

Special non-potable Water Supply.—This is derived from the Cattle Market paddock well, and about 200,000 gallons daily are available. The water is used for street watering, sewer flushing, and for trade purposes, where a high-class water is not required.

There is still a considerable number of houses the water supply of which is derived from private wells, but this number is gradually diminishing.

REFUSE DESTRUCTOR.—Most of the refuse of the town is burnt at the Destructor, which is capable of dealing with about 80 tons in the 24 hours, and is situated in the midst of the Castle Ward.

The Destructor is of the Heenan and Froude type, and is fitted with forced draught. The steam raised is utilised at the Tramway Power station, and helps to reduce the coal bill. I am informed that the general character of the refuse is poor and of low calorific value, the resulting clinker averaging about 20 per cent.

METEOROLOGY.—On the opposite page is a table showing certain meteorological conditions during the year. This table has been constructed from figures supplied me by Mr. R. H. Primavesi, of Mercers Row.

MEDICAL INSPECTION OF SCHOOL CHILDREN.—The Education (Administrative Provisions) Act, 1907, came into operation on January 1st, 1908, but as the school year did not begin until after the summer holidays no active steps were taken to carry the Act into effect until the middle of the year. In July a joint Committee of the Public Health and Education Committees appointed Mr. James Mair, M.B., D.P.H., Assistant Medical Officer of Health, his chief duty being to carry out the details of the medical inspection under the general supervision of the Medical Officer of Health. When not so engaged Dr. Mair assists as far as possible in the routine or special work of the Health Department, and acts in the place of the Medical Officer of Health during the latter's absence. Dr. Mair took up his duties on August 1st, and after spending some time on the selection

METEOROLOGICAL TABLE. 1908.

MONTH.	RAINFALL.			TEMPERATURE.						DIRECTION OF WIND.				
	Total inches.	Greatest in 24 hours.		Days in which 0.01 in. or more fell	Mean.	Maximum.		Minimum.		No. of Nights at or below 32 deg	S. W. Quadrant including W. Days.	S. E. Quadrant including S. Days.	N. E. Quadrant including E. Days.	N. W. Quadrant including N. Days.
		Depth.	Date.			Deg.	Date.	Deg.	Date.					
January ...	1.10	0.66	7	13	35.21	55.0	27	14.6	5	21	13	6	6	6
February...	0.93	0.20	16	15	41.41	52.0	19,20,21	25.7	13	9	17	0	1	11
March ...	3.16	0.81	25	20	40.16	56.6	8	25.5	20	12	11	4	2	14
April ...	3.89	0.63	28	17	43.33	62.1	9	26.5	24	9	4	3	11	12
May ...	1.43	0.40	2	13	52.77	79.0	31	36.0	4	...	15	6	6	4
June ...	1.80	0.90	1	9	60.04	84.8	3	40.0	15	...	8	3	10	9
July ...	3.07	0.79	14	12	62.88	84.6	3	49.0	8	...	13	5	4	9
August ...	3.74	0.85	31	15	59.88	82.8	3	42.2	17	...	13	1	4	13
September	1.46	0.39	3	16	55.89	77.8	30	37.3	22	...	19	4	3	4
October ...	1.07	0.26	16	11	52.83	75.8	1	30.2	25	1	3	22	5	1
November	0.82	0.16	18	14	45.25	57.6	11	19.8	10	3	11	8	6	5
December	1.67	0.28	8	20	38.11	51.4	13	10.0	30	10	12	11	4	4
YEAR 1908	24.14	0.90	June 1	175	48.98	84.8	June 3	10.0	Dec.30	65	139	73	62	92

and preparation of the apparatus, began the actual inspection of the children in October. About this time also the school nurse was appointed to assist in the work. From this time to the end of the school year (July, 1909) nothing more than the minimum required by the Board of Education in its Circular No. 576 is being attempted. This comprises the examination of those children who have been admitted to school for the first time after August, 1908, and those who will have completed the age of 13 years before the end of July, 1909, and who therefore are eligible to leave the school. During the last $2\frac{1}{2}$ months of 1908 such children, attending nine of the elementary schools, were examined on the lines laid down by Circular No. 582 of the Board of Education. The following is the list of these nine schools:

Campbell Square Council School.

Military Road „ „

Stimpson Avenue „ „

Kettering Road „ „

Barry Road „ „

All Saints' Church of England School.

St. Peter's „ „

St. Katharine's „ „

Spring Lane Council School.

The amount of work done up till the end of the year was necessarily limited, and the number of schools, and of children attending the schools, formed a comparatively small proportion of those under the care of the Education Committee. I do not, therefore, propose here to go into any details of the work, and I consider it inadvisable at this early date, and with such small data at my disposal, to draw any conclusions, or to make comparisons with similar figures obtained elsewhere. I only offer a summary of the results, along with some general statements.

The tables following give the average age, height and weight of the children at each school examined, the boys separately from the girls. As the children at Campbell Square school were inspected before the apparatus for weighing and measuring was ready, this school has been omitted from these tables:—

INFANTS.

SCHOOL.	No. Examined.	Average Age.	HEIGHT.		WEIGHT.	
			Centimeters.	Inches.	Kilograms.	Lbs.
(a) BOYS:—		Y. M.				
Military Road	17	4 11	97.82	38.5	15.74	34.6
Kettering Road	21	4 9	97.90	38.5	15.10	33.3
Stimpson Av....	22	5 5	106.48	41.9	18.20	40.1
Barry Road ...	23	4 11	101.43	39.9	16.80	37.0
All Saints' ...	26	4 8	96.00	37.8	15.60	34.4
St. Peter's ...	4	4 5	92.56	36.4	14.20	31.3
Spring Lane ...	17	4 7	94.00	37.0	14.90	32.8
St. Katharine's	4	4 2	93.40	36.8	15.50	34.2
Average ...		4 8	97.45	38.4	15.75	34.7
(b) GIRLS:—						
Military Road	16	5 2	101.10	39.8	16.10	35.5
Kettering Road	21	5 1	101.65	40.0	16.70	36.8
Stimpson Av....	12	5 1	102.44	40.3	16.90	37.2
Barry Road ...	7	4 9	101.75	40.0	15.30	33.7
All Saints' ...	17	5 0	100.70	39.6	16.70	36.8
St. Peter's ...	3	4 2	93.20	36.7	14.70	32.4
Spring Lane ...	11	4 8	92.52	36.4	13.90	30.6
St. Katharine's	15	4 8	95.20	37.5	14.90	32.8
Average ...		4 9	98.82	38.9	15.60	34.4

OLDER CHILDREN.

SCHOOL.	No. Examined.	Average Age.	Height.		Weight.	
			Centimeters.	Inches.	Kilograms.	Lbs.
(a) BOYS :—		Y. M.				
Military Road	37	13 0	140.00	55.1	33.17	73.2
Kettering Road	70	12 11	143.00	56.3	35.40	78.0
Stimpson Av....	102	13 0	144.55	56.9	34.90	77.0
Barry Road ...	53	12 11	142.90	56.2	34.90	77.0
All Saints' ...	41	12 11	138.81	54.6	32.64	72.0
St. Peter's ...	16	12 10	137.67	54.2	31.75	70.0
Spring Lane ...	43	12 11	138.40	54.5	31.98	70.5
St. Katharine's	17	12 10	139.72	55.0	32.70	72.1
Average ...		12 11	140.63	55.4	33.43	73.7
(b) GIRLS :—						
Military Road	57	13 0	142.43	56.1	34.59	76.3
Kettering Road	63	13 0	142.60	56.1	34.90	76.9
Stimpson Av....	83	13 2	146.00	57.5	36.47	80.2
Barry Road ...	56	13 0	144.48	56.9	35.00	77.2
All Saints' ...	37	12 9	140.88	55.4	34.77	76.5
St. Peter's ...	14	13 1	144.27	56.8	36.17	79.6
Spring Lane ...	42	13 0	140.50	55.3	33.47	73.8
St. Katharine's	16	12 11	139.30	54.8	33.00	72.7
Average ...		13 0	142.55	56.1	34.79	76.7

It will be seen that in general those children attending the schools in the poorer districts of the town, *e.g.*, All Saints', St. Peter's, Spring Lane, and St. Katharine's, are of a somewhat poorer physique than those at the schools in the better class districts. They were smaller and lighter and less well nourished. Their clothing was more scanty and ragged, especially in regard to the boots. In all the schools the generally ill-shod condition of the children was a most remarkable and unexpected circumstance in a town where boot and shoe manufacture is the staple industry. The cleanliness of the children left much to be desired; 18 per cent were visibly verminous, the younger children and older boys much less so than the older girls, probably because of the neglected state of the hair of these girls. It is hardly necessary to emphasize the fact that the presence of children with verminous heads in school is a source of danger to those other children whose parents strive to keep them as clean as possible. The next table gives a summary of the defects found in the group of children examined:—

No. Examined...	...	...	1164		
Verminous	...	...	209	...	17.95 per cent.
Carious Teeth	...	...	959	...	82.38 „
Enlarged Tonsils or Adenoids			68	...	4.12 „
Heart Disease	...	...	14	...	1.2 „
Phthisis...	...	...	4	...	0.34 „
Other Lung Diseases		...	19	...	1.63 „
Deformities	...	...	31	...	2.66 „
External Eye Disease		...	104	...	8.93 „
Ear Disease	...	...	18	...	1.54 „
Skin Disease	...	...	18	...	1.54 „
Paralysis	...	...	5	...	0.42 „
Epilepsy	...	...	3	...	0.25 „
Mentally Defective	...	...	4	...	0.34 „
Ringworm	...	...	5	...	0.42 „
<hr/>					
No. Examined...	...	...	891		
Defective Eyesight	...	...	175	...	19.6 per cent.
Deaf	...	...	56	...	6.2 „

Again I think it would be better to defer until another year any detailed comment on the above figures, for the reasons given above, but the following facts cannot but strike one—

Teeth. 82.4 per cent of those examined showed carious teeth. Among this number are not included those who merely showed evidence of teeth having been removed.

Eyesight. Only the older children were examined in reference to their eyesight, as it is generally found impossible to elicit accurate information by the examination of infants. About 20 per cent. of these older children, between 12 and 14 years of age, showed definite evidence of defective eyesight requiring some form of treatment, and in the majority of cases spectacles.

The figures for ringworm are much smaller than I should expect from my general experience of this disease amongst school children. This is partly accounted for by the great difficulty in detecting the disease amongst the older girls, and by the fact that the teachers at once exclude children apparently suffering from this disease, and hence Dr. Mair only saw those who had escaped the teachers' observation. The records of the Health Department show that about 150 children were reported by the teachers during 1908 as suffering from ringworm.

An attempt was made to obtain information of the past history of the children relative to infectious disease. Reliable knowledge of this is of inestimable value in guiding one's policy in respect to school closure when dealing with outbreaks of measles and whooping cough. For this purpose this information is of most value in the case of the younger children, and in their case can only be obtained from the parents. Although the parents were in all cases invited to attend the inspection of their children, it was found that only in 17 per cent. of all these examined did the parent appear, hence it was impossible to collect any useful information on this point at the medical inspection. The only other way in which to obtain this information accurately, namely, by visits of the school nurse at the homes, was found to be impracticable, as that official had to occupy her time as clerk to the medical inspector, no other clerical assistance having been provided. This is a serious drawback towards obtaining the full benefit of the work done in this department, and it is to be hoped that as soon as the necessary sanction to the appointment of the school nurse has been received from the Board of Education she will be freed from much of this clerical work, and will therefore be able to devote her services to following up the work of medical inspection at the homes of the children.

The lighting and ventilation of the newer schools is on the whole fairly efficient, but it is otherwise with the older schools, in which there is much room for improvement. The general cleanliness of the classrooms in most of the schools requires improvement, and a more frequent washing and cleansing is desirable. This is specially important in the case of the cloak

rooms, where so much dirty clothing is kept. So far as the sanitary arrangements are concerned, the conditions generally are more satisfactory.

It is anticipated that during the present year (1909) a systematic inspection of all the premises will be made, and the results embodied in a subsequent report.

SANITARY ADMINISTRATION.

SANITARY ADMINISTRATION.—There has been very little difference in the sanitary administration during 1908 from that in other years.

The work of keeping under observation the cases of phthisis reported has been transferred from the woman Health Visitor to the male Inspectors. The new Health Visitor was not appointed as a Sanitary Inspector for reasons given in an earlier part of the report, consequently the work in connection with the Shop Acts, Factory and Workshop Acts, and the Midwives' Act, which were part of the duties of her predecessor, are now undertaken by the male staff and by the Medical Officer of Health. The consequence is that the present Health Visitor has her hands entirely freed to deal with the conditions directly affecting child life. On the other hand, more work has been thrown on the male Inspectors, a portion of which is of a nature which cannot be easily recorded in figures.

The appointment of an Assistant Medical Officer of Health, mainly for the duties arising out of the Education (Administrative Provisions) Act, 1907, and the death of the Public Analyst, have also had their effect on the sanitary administration of the year, to which, however, reference is made elsewhere.

SPECIAL REPORTS BY THE SANITARY INSPECTORS.—Sixty-six special written reports were made to the head of the Department during the year by the Inspectors. These related mainly to matters dealing with drainage reconstructions, cases of alleged overcrowding, special investigations of infectious disease, etc., and were exclusive of the periodic statements of routine work, and of the annual statements made by each Inspector. 26 of such special reports were sent in by the Inspector of Nuisances (Mr. Harper), 9 by Inspector Barker, 12 by Inspector Jepson, and 13 by Inspector Walker. The Health Visitor reported specially on seven different occasions. Many of these reports were accompanied by block plans of the premises referred to in the report.

INSANITARY DWELLINGS.—The number of dwellings reported to the Sanitary Authority during the year, in accordance with the procedure authorised by the Housing of the Working Classes Act, 1890, was 13. These were:—

No. 1. Court, Bridge Street, Nos. 3, 4, 5, 6, 7, 8, 9, 10, 11, and 12.
Gas Street, No. 38.
Mill Lane, Nos. 2 and 3.

The 10 houses in No. 1 Court, Bridge Street, were damp, dilapidated, and dirty, and there was no proper through ventilation in the rooms on the upper floor. The roofs and spouting were much broken and defective. The common yard was unpaved, badly drained, and the soil filthy, while the closet accommodation was in a ruinous condition.

The house at No. 38 Gas Street was in a filthy and dilapidated condition. The walls and floors were damp. There was no through ventilation upstairs; no proper provision for food storage; and no separate water closet.

At Nos. 2 and 3 Mill Lane the conditions were somewhat similar to those in Gas Street.

Closing Orders were applied for and obtained in the case of the houses in Bridge Street, but the houses were put into habitable condition without dislodging the tenants, though after considerable delay. In the case of Gas Street and Mill Lane, which were not represented until November, the Council resolved to apply for closing orders, and in the beginning of the present year these were obtained.

FACTORY AND WORKSHOP ACTS.—Attached is the form in which reports of work done under these Acts must be sent to the Home Office each year.

Attention has been drawn in former reports to the fact that it is a matter of difficulty to get every firm to send in the lists of outworkers twice a year, as is required by the Act.

This difficulty still exists, in spite of the fact that circular letters reminding the employers are sent out before the dates when the returns are due. If these lists were sent in up to date without such reminder a considerable amount of labour and time would be saved. Employers of labour should understand that there is no obligation on the part of the Department to send

County Borough of Northampton,

On the Administration of the FACTORY & WORKSHOP ACT, 1901, in connection with
Factories, Workshops, Workplaces, and Homework.

1.—INSPECTION.

Including Inspections made by Sanitary Inspectors or Inspectors of Nuisances.

Premises. (1)	Number of		
	Inspections. (2)	Written Notices. (3)	Prosecutions (4)
Factories... (Including Factory Laundries)	12	3	.
Workshops (Including Workshop Laundries)	339	104	...
Workplaces (Other than Outworkers' premises included in Part 3 of this Report)	.	..	.
Total ...	351	107	.

2.—DEFECTS FOUND.

Particulars.	Number of Defects.			Number of Prosecutions.
	Found.	Remedied	Referred to H.M. Inspector.	
(1)	(2)	(3)	(4)	(5)
<i>Nuisances under the Public Health Acts :—*</i>				
Want of Cleanliness	88	88	...	...
Want of Ventilation ... ..	...	...	...	..
Overcrowding	4	4	...	...
Want of Drainage of Floors ... ..	...	...	...	..
Other Nuisances	67	67	...	...
†Sanitary accommodation	{ insufficient	7	7	...
	{ unsuitable or defective	6	6	...
	{ not separate for sexes... ..	2	2	...
<i>Offences under the Factory and Workshop Act :—</i>				
Illegal occupation of underground bakehouse (s 101)	...	...	...	...
Breach of special sanitary requirements for bake-houses (ss. 97 to 100)	72	72	...	...
Other offences	3	3	...	...
(Excluding offences relating to outwork which are included in Part 3 of this Report)				
Total	249	249	...	...

* Including those specified in sections 2, 3, 7 and 8, of the Factory and Workshop Act as remediable under the Public Health Acts.

† Section 22 of the Public Health Acts Amendment Act, 1890, has been adopted by the Town Council. The Standard of sufficiency and suitability of sanitary accommodation enforced is the same as that of the Sanitary Accommodation Order of February 4th, 1903.

3.—HOMEWORK.

NATURE OF WORK. (1)	OUTWORKERS' LISTS, SECTION 107.										Inspections of Outworkers' Premises. (13)	OUTWORK IN UNWHOLE- SOME PREMISES, SECTION 108.			OUTWORK IN INFECTED PREMISES, SECTIONS 109, 110.			
	Lists received from Employers.						Addresses of Outworkers		Notices served on Occupiers as to keeping or sending lists. (10)	Prosecutions.		Instances.	Notices served. (15)	Prose- cutions. (16)	Instances.	Orders made (S. 110)	Prose- cutions (Sections 109, 110).	
	Sending twice in the year.			Sending once in the year.			Received from other Councils. (8)	Forwarded to other Councils. (9)		Failing to keep or permit inspection of lists. (11)								Failing to send lists. (12)
	Lists. (2)	Outworkers.		Lists. (5)	Outworkers.													
		Con- tractors. (3)	Work- men. (4)		Con- tractors. (6)	Work- men. (7)												
Wearing Apparel— (1) Making, &c. ... (2) Cleaning and Washing	194	45	1166	14	...	82	18	128	...	...	...	602	75	75	...	5	...	...

Lace, Lace Curtains and Nets, Furniture and Upholstery, Fur Pulling, Umbrellas, Paper Bags and Boxes, Brush Making, Stuffed Toys, File Making, Electro Plate, Cables and Chains, Anchors and Grapnels, Cart Gear, Locks, Latches, and Keys.—No Outworkers in these Trades.

4.—REGISTERED WORKSHOPS.

Workshops on the Register (s. 131) at the end of the year. (1)	Number. (2)
Number of Workshops (including Bakehouses) on Register ...	407
Number of Outworkers' Premises on Register ...	487
Total Number of Workshops on Register ...	894

5.—OTHER MATTERS.

Class. (1)	Number (2)
MATTERS NOTIFIED TO H.M. INSPECTOR OF FACTORIES:—	
Failure to affix abstract of Factory and Workshop Act (s. 133) ...	12
Action taken in matters referred by H.M. Inspector as remediable under the Public Health Acts, but not under the Factory and Workshop Act (s. 5) ...	9
Other ...	13
Underground Bakehouses (s. 101)—	I
Certificates granted during the year ...	...
In use at the end of the year ...	I

(Signature) J. DOIG McCRINDLE, Medical Officer of Health.

NOTE.—The Factory and Workshop Act, 1901 (s. 132), requires the Medical Officer of Health in his Annual Report to the District Council, to report specifically on the administration of that Act in workshops and workplaces, and to send a Copy of his Annual Report, or so much of it as deals with this subject, to the Secretary of State (Home Office.) If the Annual Report is presented otherwise than in print, it is unnecessary to include in the copy sent to the Home Office the portions which do not relate to factories, workshops, workplaces, or homework. The duties of Local Authorities and the Medical Officer of Health under the Act of 1901, are detailed in the Home Office Memorandum of December, 1904. A further Memorandum, on the Home Work Provisions of the Factory Act, was issued to all District Councils and Medical Officers of Health in October, 1906

out these reminders, and a little attention on the part of a number of them would be of great assistance in the administration of the public health, and therefore of much benefit to the town.

Otherwise there is very little comment required on the work of the Department under the above Acts during the year. The routine inspection has been maintained. Communications from the Factory Inspector have been duly attended to as they were received, and the action of the Department reported to him through the Town Clerk. The outworkers' premises have been visited, mostly by the male Inspectors, as, since the resignation of the late Health Visitor, that portion of this work for which she was responsible has been transferred to the Inspectors.

SHOP ACTS.—The routine visits in connection with these Acts have also been mostly carried out by the male staff, though this was a duty which in former years devolved on the Health Visitor.

FOOD AND DRUGS ACTS, 1875—1899.—It is with the deepest feelings of regret that I refer to the lamented death of the Borough Analyst (Sir Thomas Stevenson) in 1908, already mentioned in my introduction to the present report. Owing to the fact that the appointment of his successor (Mr. R. Bodmer) in December was not officially sanctioned by the Local Government Board until the beginning of 1909, the Borough was without a Public Analyst for nearly six months. On this account the number of samples purchased under the above Acts falls considerably below that of each of the immediately preceding years. Only for the first two quarters have official reports been received. Towards the end of the year, however, after Mr. Bodmer's appointment by the Council, but before its confirmation by the Central Authority, a number of informal samples were submitted for analysis.

The following is a summary of the work done in connection with the Food and Drugs Acts during the year. The total number of samples purchased for analysis was 131. Of these, 113 were obtained officially in compliance with the terms of the Act, and 18 informally. Certificates of analyses were received from Sir Thomas Stevenson in reference to 108 of the 113 official samples. The report on one other analysis was received from his assistant after Sir Thomas' death, while the last four were not reported on, as the analyses were not completed before he died. Of the 109 samples, therefore, reported on, the following table gives the details:—

OFFICIAL SAMPLES.

Nature of Sample.	No. of Samples.					Genuine.	Adulterated.
	Total.						
*Beer	1	1	0
Butter	15	15	0
Camphorated Oil	1	1	0
Cheese	1	1	0
Cider	1	1	0
Cocoa	1	1	0
Coffee	1	1	0
Iodine, Tincture of	1	1	0
Malt Vinegar	1	1	0
Margarine	7	6	1
Milk, New	75	63	12
„ Skim	1	1	0
Mustard	1	1	0
Quinine, Ammoniated Tincture	1	1	0
Tartaric Acid	1	1	0
Total	109	96	13

*Report of analysis received after the death of the Public Analyst from his assistant.

The next table gives the list of unofficial, or informal, samples taken, as stated above, towards the end of the year, and the results of analyses by the newly-appointed analyst—

INFORMAL SAMPLES.

Nature of Sample.	No. of Samples.					Genuine.	Adulterated.	
	Total.							
Butter	4	.....	4	.....	0
Margarine	2	.....	2	.....	0
Milk, New	12	.....	12	.....	0
				—		—		—
Total	18		18		0

All these informal samples were found to be genuine.

Reports on the analyses of 127 out of the 131 official and informal samples purchased are thus available, and of this number 13 showed that the article of food from which the sample was taken was adulterated. The percentage of adulteration, therefore, was 10.2.

The percentage of adulteration in each of the five previous years was as follows :—

1903	...	10.1	1906	...	12.9
1904	...	15.4	1907	...	13.3
1905	...	10.7			

The average for the five years was 12.5. The amount of adulteration detected during 1908 was, therefore, distinctly below that of the average for the previous quinquennium.

LIST SHOWING EXTENT OF ADULTERATION IN ADULTERATED ARTICLES.

No.	NATURE OF SAMPLE.	EXTENT OF ADULTERATION.				REMARKS.
20	New Milk	27%	fat abstracted	...	...	Prosecuted.
24	" "	{ 5% 18%	" added water	" }	...	"
25	" "	2%	fat abstracted	...	...	Warned.
26	" "	4%	" "	...	...	"
41	" "	10%	" "	...	...	Prosecuted.
65	" "	32%	" "	...	...	"
68	" "	24%	" "	...	...	"
72	" "	10%	" "	...	...	"
81	" "	2%	" "	...	...	Warned.
82	" "	10%	" "	...	...	Prosecuted.
84	" "	3%	" "	...	...	Warned.
100	" "	11%	" "	...	...	No proceedings taken on account of death of Public Analyst.
76	Margarine	<div> <div>Fats containing 11% butter</div> <div>fat 79.5%</div> <div>Water 16.3%</div> <div>Salt and Curd ... 4.0%</div> <div>Boric Acid, or prepn. thereof 0.2%</div> </div>				Warned.
						100.0%

1908. List of cases under the Food and Drugs Acts in which proceedings were taken for adulteration:—

SAMPLE		RESULT OF ANALYSIS.		RESULT OF PROSECUTION.
NEW MILK.				
No. 20	...	Milk fat abstracted	27%.....	Fined £5 and costs.
„ 24	...	„ „	3% and added water 18%	„ £2 inclusive.
„ 41	...	„ „	10%.....	„ £1 „
„ 65	...	„ „	32%.....	„ £2 „
„ 68	...	„ „	24%.....	„ 10s. „
„ 72	...	„ „	10%.....	„ £2 „
„ 82	...	„ „	10%.....	„ £2 „

In those cases in which the adulteration was comparatively small in amount it was considered sufficient to draw the attention of the vendors by letter to the offences, and to warn them against a recurrence.

Preservatives in Food.—The addition of a preservative of the nature of a boric acid preparation was found in one instance only, a sample of margarine, to which 0.2 per cent. of this preservative was added. In this case the vendor was warned by letter.

BAKEHOUSES.—There were 99 bakehouses under the supervision of the Department during 1908, an increase of seven on the number during the previous year. These bakehouses have been regularly inspected as part of the routine work during the year, 179 visits having been paid, and defects having been found on 70 occasions, each of which was duly remedied on attention being called to the matter.

SLAUGHTER-HOUSES.—The register contains the particulars of 65 of these premises. Each has been regularly inspected during the year, 210 visits having been paid; and in 29 cases sanitary defects or infringements of the bye-laws were discovered. These, however, were put to rights at once on the representation of the Inspector.

So far as our inspection has shown there has been no particular reason to complain against the management, but it is obvious that with so many private slaughter-houses, in most of which the slaughter and dressing of animals regularly takes place, the supervision, even from the sanitary point of view, is no light task, especially as it forms but a small proportion of the work of the Inspectors.

It is a matter of great regret that the slaughter of animals for the people's food should take place on private premises, where the most careful supervision, under the present circumstances, can only be of an imperfect nature

FOOD INSPECTION.—The following articles of food, found to be unfit for human consumption, were voluntarily surrendered to the officers of the department during the year, and destroyed.

NATURE OF ARTICLE.						WEIGHT.		
						cwt.	qrs.	lbs.
Mutton	...	...	...	...	...	2	0	4
Pork	...	...	...	...	...	1	1	11
Liver	...	...	...	...	...	0	0	4
Apples	...	...	...	...	...	5	2	0
Sweet Chestnuts	...	...	...	...	...	8	2	0
Sprats	...	...	...	...	...	2	2	0
Cod	...	...	...	...	...	0	1	18
Cod's Roe	...	...	...	...	...	0	1	19
Total						20	3	0

In addition to the above, 45 rabbits were surrendered, and found to be unfit for human food, and destroyed.

The matter of food inspection in the Department has been under my consideration recently, and I have come to the conclusion that it is not so effective as it should be, and I intend during the earlier portion of the present year (1909) to report specially to the Public Health Committee on the matter. Pending the presentation of this report, I shall defer any further remarks for the present.

MILK SUPPLY.—There were 200 milksellers and 33 cowkeepers on the register at the end of the year. The number of milksellers is constantly changing, as new ones are taking up the business and the older ones dropping it, and applications for registration are made every month.

A list of requirements considered necessary in the case of cowkeepers to ensure that the animals should be kept under as favourable circumstances as possible, was submitted in the previous year's report, and, as far as possible, after registration, these conditions are insisted on, and on the whole not much difficulty is experienced in getting the major portion of these requirements carried out. It necessitates, however, constant supervision for the most part to keep these premises up to a decent standard of sanitary efficiency.

DISINFECTING STATION.—The number of articles dealt with at this station in St. Andrew's Road during each month of the year ending January 2nd, 1909, will be found in the next table. There is a considerable increase in the number compared with last year, and a still greater increase compared to the previous year. It will be noted that during the last three months the amount of work was much greater than during any other similar period during the year.

The total increase, and that specially referred to in those last three months, was due, of course, to the behaviour of the epidemic of scarlatina which occurred.

The number of articles disinfected during the year ending January 2, 1909, was:—

MONTH.							NUMBER OF ARTICLES.
January	...	...	...	...	...	...	817
February	...	...	...	...	...	...	796
March	...	...	...	...	...	...	463
April	...	...	...	...	...	...	601
May	...	...	...	...	...	...	356
June	...	...	...	...	...	...	578
July	...	...	...	...	...	...	603
August	...	...	...	...	...	...	480
September	...	...	...	...	...	...	701
October	...	...	...	...	...	...	939
November	...	...	...	...	...	...	1008
December	...	...	...	...	...	...	1303
Total during year							8645

COMMON LODGING HOUSES.—The following is abstracted from the report of Inspector Barker, to whom the special duties in connection with the supervision of these houses is delegated:—

The usual weekly visits have been regularly made, and although not much complaint has been necessary, any instructions of mine have been quickly complied with.

The houses have been whitewashed the requisite number of times.

One midnight visit has been made, but no infringement of the bye-laws was discovered.

In July I received a complaint that the "Malt Shovel," Bridge Street, was used as a common lodging-house, although this had been forbidden by the Magistrates when renewing the license. I made a midnight visit to ascertain whether this was correct, and found that several lodgers were accommodated. I reported the matter, but the Town Clerk did not advise prosecution, and the occupier was warned. I have not received any further complaints respecting the matter. Three lodgers reported to be ill were removed to the Workhouse, and died there. One other was notified as suffering from erysipelas. He was removed by us to the Workhouse, and the bedding was disinfected. One child had measles in Jackson's Lodging-house. She was isolated, and no other case occurred. In addition to this a woman died suddenly in Barker's House, Castle Street.

The houses are in the same occupation as during 1907.

CANAL BOATS.—The annual report on canal boats was submitted, as required by the Acts and Regulations, by the Inspector of Nuisances in January, and a copy duly sent to the Local Government Board. The following is the text of the report;—

Health Department,
20 Guildhall Road,
Northampton,
January 5th, 1909.

Gentlemen,

CANAL BOATS ACTS.

In compliance with section 3 of the Canal Boats Act, 1884, I have to present to you the Annual Report of the work done under the Canal Boats Acts, 1877—1884, and the Local Government Board's Regulations made thereunder, for the year ending December 31st, 1908.

The duties are being performed in conjunction with my duties as Inspector of Nuisances.

The salary for the joint offices is £130 per annum.

The number of boats inspected during the year was 50, registered to carry 150 adults; as compared with 49, registered to carry 147 adults,

in 1907. The actual numbers carried in these boats were 48 men, 33 women, and 40 children—120 persons in all, equal to 101 adults.

The whole of the boats inspected were found to be in compliance with the Acts and Regulations.

No case of infectious disease was notified on the canal boats during the year, and it was thus unnecessary to detain any boat for disinfection.

The number of boats on the register is 21.

No boats have been registered or re-registered during the year, nor any certificates cancelled.

FRANK HARPER.

Inspector of Canal Boats.

OFFENSIVE TRADES.—No application for the registration of an offensive trade was received during the year, and, as in the previous year, there were only three premises on which trades which can be so classified are carried on. No complaint has been received during the year in respect to any of these. All have been duly inspected, and the methods adopted have given no grounds for any reasonable objections.

NEW BUILDINGS.—The Borough Engineer has, as in former years, kindly supplied the following information:—

New houses	...	...	...	...	...	...	121
New workshops and warehouses	...	...	...	...	...	...	7
New stables	...	...	...	...	...	...	2
Temporary buildings	...	...	...	...	...	...	4
Public library	...	...	...	...	...	...	1
Church	...	...	...	...	...	...	1
New street and back road	...	...	...	...	...	...	1
Alterations and additions to existing buildings	...	...	...	...	...	...	88
New drains to premises	.	...	...	...	...	...	20
							—
							245
							—

PROSECUTIONS.—The legal proceedings taken under the Food and Drugs Acts have been already set forth, as also have the measures under the Housing of the Working Classes Act. With the above exceptions, no further legal proceedings on the part of the Department were necessary during the year.

DRAIN TESTING.—The following table gives the list of premises in which the smoke test was applied to the drainage system, with the result of the test in each case:—

SITUATION OF PREMISES.	RESULT.				Total.
	Found Defective.		Not found Defective.		
Abington Park (caretaker's house)...	1	...	0	...	1
Abington Square, 1	1	...	0	...	1
Adams Avenue, 61	1	...	0	...	1
Adelaide Street, 19, 37.....	0	...	2	...	2
Alcombe Road, 96, 98, 100.....	2	...	1	...	3
Austin Street, 1	1	...	0	...	1
Barrack Road, Hope's Place, 47 ...	1	...	0	...	1
Billing Road, " Beaumont "	1	...	0	...	1
Bluecoat School	1	...	0	...	1
Bostock Avenue, 46	1	...	0	...	1
Bridge Street, 60	1	...	0	...	1
Brook Street, 7, 11	2	...	0	...	2
Byfield Road, 12, 14, 16, 18, 20 ...	5	...	0	...	5
Castilian Terrace, 9	0	...	1	...	1
Castle Street, 70, 72	2	...	0	...	2
Clare Street, 96, 153	1	...	1	...	2
Clarence Street, 39, 109	2	...	0	...	2
Cloutsham Street, 47, 49	2	...	0	...	2
College Street, 10, 49	2	...	0	...	2
Cowper Street, 34, 36	0	...	2	...	2
Cranstoun Street, 26, 28	1	...	1	...	2
Craven Street, 27	1	...	0	...	1
Derby Road, 24	1	...	0	...	1
Derngate, 71	1	...	0	...	1
Drive, The, 19	1	...	0	...	1
East Park Parade, 26	0	...	1	...	1
Francis Street, 52	1	...	0	...	1
Freehold Street, 7	1	...	0	...	1
Grafton Street, 105, 107	2	...	0	...	2
Harborough Road, 145	1	...	0	...	1
Harding Terrace, 34	1	...	0	...	1
Herbert Street, 22, 24, 30, 32	3	...	1	...	4
Hood Street, 16, 39, 41	3	...	0	...	3

SITUATION OF PREMISES.	RESULT.				Total.
	Found Defective.		Not found Defective.		
Hunter Street, 41, 43	2	...	0	...	2
Ivy Road, 37, 39	2	...	0	...	2
Junction Road, 90, 92, 94	3	...	0	...	3
Kingsley Road, 50.....	1	...	0	...	1
Kingsthorpe Road, 46	1	...	0	...	1
Kingswell Terrace, 12, 13	2	...	0	...	2
Lawrence Street, 20	0	...	1	...	1
Leicester Parade, 5	1	...	0	...	1
Liz Street, 12, 14	2	...	0	...	2
Lorne Road, 5	1	...	0	...	1
Louise Road, 33	1	...	0	...	1
Maple Street, 12.....	1	...	0	...	1
Marefair, 63	1	...	0	...	1
Market Square, 31.....	1	...	0	...	1
Marlborough Road, 27	0	...	1	...	1
Milton Street, 22, 24, 30, 32	2	...	2	...	4
Monk's Pond Street, 46	1	...	0	...	1
Moore Street, 47, 49	0	...	2	...	2
Mounts (Upper), 57	1	...	0	...	1
Newland, 48	1	...	0	...	1
Oakley Street, 17	0	...	1	...	1
Oliver Street, 69, 96, 98	2	...	1	...	3
Portland Street, 53	1	...	0	...	1
Priory Street (Upper), 19.....	1	...	0	...	1
Roe Road, 24, 26	0	...	2	...	2
Queen's Road, 37, 39	2	...	0	...	2
St. Andrew's Street, 31, 33.....	0	...	2	...	2
St. Edmund's Road, 99, 101, 103, 105	4	...	0	...	4
St. Giles' Street, "Ellesmere House," 69	1	...	1	...	2
St. Katherine's Parade, 55	1	...	0	...	1
St. Paul's Terrace, 4, 5, 6	3	...	0	...	3
Salisbury Street, 39	1	...	0	...	1
Shakespeare Road, 5, 7	2	...	0	...	2
Sheep Street, 30.....	1	...	0	...	1
Spencer Road, 25	1	...	0	...	1
Uppingham Street, 15	1	...	0	...	1

SITUATION OF PREMISES.	RESULT.		Total.
	Found Defective.	Not found Defective.	
Victoria Promenade, 1	0	1	1
Wellingborough Road, 234, 76, 78...	3	0	3
West Street, 40	0	1	1
	—	—	—
	92	25	117
	—	—	—

RECONSTRUCTION OF DRAINS.—The next table shows those premises in which the drainage system was so defective as to necessitate reconstruction. This was carried out in all instances under the supervision of the Department:—

SITUATION OF PREMISES.	NO. OF HOUSES.
Abbey Street, 55	1
Abington Square, 12.....	1
Augustine Street, 29, 31, 33	3
Bailiff Street, 71, 73, 75, 77, 79, 81, 83, 85, 113, 120, 122	11
Barrack Road, Hope's Place, 47, 47A	2
Bath Street, 31	1
Bluecoat School	1
Bostock, Avenue, 46	1
Bridge Street, 60	1
Brooke Street, 9, 11, 13	3
Brunswick Place, 29	1
Byfield Road, 12, 14, 16, 18, 20	5
Chaucer Street, 15, 17, 19	3
Clare Street, 26, 86, 153	3
Cloutsham Street, 47, 49, 51, 53	4
College Street, 49, 11	2
Cowper Street, 25, 27	2
Cranstoun Street, 16, 18, 20, 22	4
Craven Street, 21, 23	2
Crispin Street, 18, 20, 22, 24	4
Derngate, 71, 34.....	2
Devonshire Street, 25, 27, 49, 51, 53	5
Exeter Road, 4, 6, 8	3
Fife Street, 13, 15	2
Francis Street, 48, 50, 52, 54.....	4

SITUATION OF PREMISES.	NO. OF HOUSES.
Freehold Street, 7	1
Gold Street, 7.....	1
Grafton Street, 105, 107	2
Grenville Terrace, 19, 21	2
Harding Terrace, 32, 34	2
Herbert Street, 30, 32	2
Hood Street, 16, 39, 41	3
Hunter Street, 37, 39, 41, 43	4
Junction Road, 79, 81, 83, 85, 87, 89, 91, 93	8
Kerr Street, 17, 40,	2
Kingsthorpe Road, 46	1
Lady's Lane, 1	1
Liz Street, 12, 14, 16, 18	4
Lorne Road, 1, 3, 5, 7,	4
Louise Road, 33.....	1
Milton Street, 22, 24, 26, 28, 30, 32	6
Mounts (Upper), 57	1
Nelson Street, Square No. 1, houses 1 to 14 (inclusive) ...	14
Newland, 49	1
New Town Road, 1, 2, 4.....	3
Oliver Street, 96, 98	2
Palmerston Road, 54, 56, 58, 60	4
Palmerston Terrace, 1 to 8 (inclusive)	8
Parade, 9	1
Park Street, 5, 7, 9	3
Portland Street, 53	1
Priory Street (Upper), 19.....	1
Queen's Road, 37, 39, 50, 52	4
Russell Terrace, 14, 16, 18	3
St. Edmund's Road, 99, 101, 103, 105	4
St. Giles' Street, 59, 69	2
St. James' Street, 41, 43	2
St. John's Street, 60, 62, 64, 66	4
St. Paul's Terrace, 4	1
Salisbury Street, 29, 31, 33, 35, 37, 39	6
Shakespeare Road, 5, 7, 43, 45, 47, 49	6
Silver Street, 11	1
Spencer Parade, 8	1

SITUATION OF PREMISES.	NO. OF HOUSES.
Spencer Road, 25, 27	2
Stockley Street, 43	1
Thrift Street (Upper), 113, 115	2
Uppingham Street, 7, 9, 11, 13, 15, 17, 19	7
Wellingborough Road, 58, 60, 76, 78, 160, 162	6
West Street, 36	1
Weston Street, 18, 20, 22, 24.....	4
Willesden Cottages, 1 to 11 (inclusive)	11
York Place, 1, 3	2
Total	224

HOUSE TO HOUSE INSPECTION.—This important work has been systematically carried out during the year. Owing, however, to the additional duties in connection with the supervision of phthisis cases, the work under the Factory and Workshop Acts and Shop Acts having been transferred to the male staff, and also to the fact that during the time the Department was without the services of a Health Visitor much of her work in connection with infant mortality had to be done by the Inspectors, less of this house to house inspection was carried out than appears in former reports.

The following table gives some idea of the extent of this work during 1908 :

STREET.	NO. OF HOUSES.	STREET.	NO. OF HOUSES.
Abbey Street	28	Gilbert Terrace	4
Alma Street	22	Gregory Street	14
Austin Street	34	Harding Terrace	7
Bailiff Street	6	Junction Road	27
Bath Gardens	4	Military Road	48
Bath Terrace	4	Navigation Row and Court ...	10
Bridge Street, Courts 1 & 7...	17	Oakley Street	26
„ Maycock's Row	13	Poole Street	50
Carlton Road	16	Palmerston Road	54
Cartwright Road.....	9	St. Peter's Terrace	9
Clifton Place ..	6	Scarletwell Street and Courts...	82
Compton Street	13	Stanley Road	16
Crispin Street	6	Summer's Terrace	6

STREET.	NO. OF HOUSES.	STREET.	NO. OF HOUSES.
Devonshire Street	43	Todd's Lane	6
Edith Street	40	Well Yard, Kingsthorpe	9
Ethel Street (part).....	20	Weston Place	13
Gas Street	31	Wilby Street	31
			<hr/>
			724
			<hr/>

A general summary on broad lines is set out below of the routine inspectorial work during the year. A report on these lines is submitted to the Medical Officer of Health each month by each of the Inspectors, and the details are discussed and criticised; and it only remains to be said that on the part of the staff this work was as a rule carried out conscientiously and efficiently:—

SUMMARY OF ROUTINE WORK CARRIED OUT BY THE HEALTH DEPARTMENT DURING THE YEAR 1908.

Total number of inspections and visits	...	...	...	...	11519
Nuisances reported by the sanitary inspectors	...	...	...	...	2609
Nuisances reported by residents	...	...	...	...	298
Nuisances abated	...	...	...	...	2580
Statutory notices served	...	...	...	...	576
Inspection of houses after complaint of nuisance	...	...	...	...	386
Visits to houses in which infectious illness existed	...	...	...	...	2755
Houses disinfected	...	...	...	...	582
Drains tested with the volatile test	...	...	...	...	61
Drains tested with the asphyxiator	...	...	...	...	121
Drains found defective after testing	...	...	...	...	101
Drains tested with water	...	...	...	...	209
Drains reported choked, and subsequently disinfected and amended	...	...	...	...	186
Drains reconstructed	...	...	...	...	224
Drains repaired, and gullies substituted for bell-traps	...	...	...	...	255
Bath, lavatory, sink, waste-pipes disconnected from drains and altered so as to discharge over gully-traps	...	...	...	...	19
New pans fixed to closets	...	...	...	...	79
Indoor soil-pipes abolished and new ones fixed outside	...	...	...	...	4
Closets supplied with flushing apparatus	...	...	...	...	15
Accumulations of manure and offensive refuse removed	...	...	...	...	36

Animals that were kept so as to be a nuisance removed	10
Animals kept in contravention of the bye-laws removed or conditions altered	8
Houses cleansed and whitewashed	488
Dilapidated houses repaired	314
Houses unfit for habitation	27
Overcrowding in houses abated	3
Yard pavings relaid and repaired	227
Spoutings repaired and renewed... ..	118
New slop sinks fixed	86
Slaughter-houses, cowsheds, milkshops, inspected and found defective in sanitation	145
Workshops and factories inspected and found defective in sanitation	92
Domestic workshops inspected and found defective in sanitation ...	64
Inspection of courts and alleys	48
Houses supplied with town water	6
Miscellaneous	188

TABLE I.

Vital Statistics of Whole District during 1908 and previous Years.

COUNTY BOROUGH OF NORTHAMPTON.

Year.	Popula- tion esti- mated to Middle of each Year.	Births.		Total Deaths registered in the District.				Tetal Deaths in Public Institu- tions in the District.	Deaths of Non- residents regis- tered in Public Institu- tions in the District.	Deaths of Resi- dents regis- tered in Public Institu- tions beyond the District.	Net Deaths at all Ages belonging to the District.	
		Number.	Rate*	Under 1 Year of Age.		At all Ages.					Number.	Rate*
				Number.	Rate per 1,000 Births regis- tered.	Number.	Rate.*					
I	2	3	4	5	6	7	8	9	10	11	12	13
1898	61117	1694	27.7	307	181.2	1074	17.5	179	90	11	995	16.2
1899	61132	1671	27.3	253	151.4	1004	16.4	176	95	12	921	15.0
1900	61147	1546	25.2	224	144.8	1041	17.0	199	101	11	951	15.5
Borough ex- tended												
1901	87021	2345	26.9	334	142.4	1269	14.5	174	62	9	1216	13.9
1902	88206	2272	25.7	301	132.4	1358	15.4	184	75	11	1294	14.7
1903	89960	2194	24.4	301	137.2	1307	14.5	222	88	10	1219	13.5
1904	90340	2102	23.3	279	132.7	1293	14.3	245	108	9	1185	13.1
1905	91230	1937	21.2	239	123.4	1243	13.6	239	84	8	1159	12.7
1906	91640	1985	21.7	240	120.9	1108	12.1	231	77	22	1061	11.6
1907	92750	1956	21.1	235	120.1	1209	13.0	242	98	37	1151	12.4
Averages for years 1898-1907	81454	1970	24.4	271	138.6	1191	14.8	209	88	14	1115	13.9
1908	93760	2043	21.78	198	96.9	1192	12.71	254	93	32	1131	12.06

*Rates in Columns 4, 8, and 13 calculated per 1,000 of estimated population.

NOTE.—The deaths included in Column 7 of this Table are the whole of those registered during the year as having actually occurred within the district or division. The deaths included in Column 12 are the number in Column 7, corrected by the subtraction of the number in Column 10 and the addition of the number in Column 11.

By the term “ Non-residents ” is meant persons brought into the district on account of sickness or infirmity, and dying in public institutions there ; and by the term “ Residents ” is meant persons who have been taken out of the district on account of sickness or infirmity, and have died in public institutions elsewhere.

The “ Public institutions ” taken into account for the purposes of these tables are those into which persons are habitually received on account of sickness or infirmity, such as hospitals, workhouses and lunatic asylums. A list of the Institutions in respect of the deaths in which corrections have been made is given on the opposite page.

Area of District in acres (exclusive of area covered by water)	3,432	Total population at all ages.....87,021		Census of 1901.
		Number of inhabited houses.....17,602		
		Average number of persons per house... 4.94		

TABLE II.—Vital Statistics of separate Localities in 1908, and previous years.

COUNTY BOROUGH OF NORTHAMPTON.

NAMES OF LOCALITIES.		1.—WHOLE DISTRICT.				2.—ST. MICHAEL WARD				3.—CASTLE WARD.				4.—ST. CRISPIN WARD.				5.—SOUTH WARD.				6.—NORTH WARD.				7.—KINGSTHORPE WARD.				8.—ST. JAMES WARD.				9.—FAR COTTON WARD.				10.—ST. EDMUND WARD				
Year.		Population estimated to middle of each year.	Births registered.	Deaths at all ages.	Deaths under 1 year.	Population estimated to middle of each year.	Births registered.	Deaths at all ages.	Deaths under 1 year.	Population estimated to middle of each year.	Births registered.	Deaths at all ages.	Deaths under 1 year.	Population estimated to middle of each year.	Births registered.	Deaths at all ages.	Deaths under 1 year.	Population estimated to middle of each year.	Births registered.	Deaths at all ages.	Deaths under 1 year.	Population estimated to middle of each year.	Births registered.	Deaths at all ages.	Deaths under 1 year.	Population estimated to middle of each year.	Births registered.	Deaths at all ages.	Deaths under 1 year.	Population estimated to middle of each year.	Births registered.	Deaths at all ages.	Deaths under 1 year.	Population estimated to middle of each year.	Births registered.	Deaths at all ages.	Deaths under 1 year.					
		a.	b.	c.	d.	a.	b.	c.	d.	a.	b.	c.	d.	a.	b.	c.	d.	a.	b.	c.	d.	a.	b.	c.	d.	a.	b.	c.	d.	a.	b.	c.	d.	a.	b.	c.	d.					
1898	...	61117	1694	995	307																																					
1899	...	61132	1671	921	253																																					
1900	...	61147	1546	951	224																																					
Borough extended.	1901	...	87021	2345	1216	334																																				
	1902	...	88206	2272	1294	301																																				
	1903	...	89960	2194	1219	301	14111		157	31	10645		163	47	11335		146	29	7575		138	31	14136		212	70	9732		127	25	7912		92	28	4544	129	50	17	9170		126	21
	1904	...	90340	2102	1185	279	14052		182	36	10454		165	49	11184		156	24	7517		107	15	14077		195	61	10051		104	29	8110		100	29	4678	140	63	16	10217		113	20
	1905	...	91230	1937	1159	239	14244		181	29	10189		171	36	11171		136	29	7515		113	14	13609		179	45	10395		104	30	8642		97	32	4906	95	48	10	10559		130	17
	1906	...	91640	1985	1061	240	14347		160	34	10401		145	38	11027		150	31	7278		105	20	13769		171	47	10484		94	19	8830		106	30	4948	118	36	8	10556		94	13
	1907	...	92750	1956	1151	235	14310		172	30	10350		173	41	11446		163	24	7243		114	16	13712		175	50	10841		101	21	8786		84	19	5074	120	45	16	10988		124	18
Averages of Years 1898 to 1907		81454	1970	1115	271	14213		170	32	10408		163	42	11233		150	27	7426		115	19	13861		186	55	10301		106	25	8116		93	28	4645	123	52	14	10458		117	18	
1908	...	93760	2043	1131	198	14580		191	14	10273		137	24	11482		157	20	7279		109	25	14014		168	45	11004		95	14	8909		102	26	4913	117	54	16	11303		117	14	

NOTES.—(a) The separate localities adopted for this table are areas of which the populations are obtainable from the census returns. Block 1 is used for the whole District; and blocks 2, 3, &c., for the several localities.

(b) Deaths of residents occurring in public institutions beyond the district are included in sub-columns *c* of this Table, and those of non-residents registered in public institutions in the district excluded. See note on Table I. as to meaning of terms "resident" and "non-resident."

(c) Deaths of residents occurring in public institutions, whether within or without the district, are allotted to the respective localities according to the addresses of the deceased.

(d) Care has been taken that the gross totals of the several columns in this Table respectively equal the corresponding totals for the whole districts in Table I. and IV. thus, the totals of sub-columns *a*, *b*, and *c* agree with the figures for the year in the columns 2, 3, and 12, respectively, of Table I.: the gross total of the sub-columns *c* agrees with the total of column 2 in Table IV., and the gross total of sub-columns *d* with the total of column 3 in Table IV.



TABLE III.—Cases of Infectious Diseases notified during the Year 1908. COUNTY BOROUGH OF NORTHAMPTON.

NOTIFIABLE DISEASE.	CASES NOTIFIED IN WHOLE DISTRICT.							TOTAL CASES NOTIFIED IN EACH LOCALITY.									NUMBER OF CASES REMOVED TO HOSPITAL FROM EACH LOCALITY.									
	At all Ages.	At Ages—Years.						1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9	10
		Under 1.	1 to 5.	5 to 15.	15 to 25.	25 to 65.	65 and upwards.	St. Michael.	Castle.	St. Crispin.	South.	North.	Kings-thorpe.	St. James.	Far Cotton.	St Edmund.	W. St. Michael.	Castle	St. Crispin.	South.	North.	Kings-thorpe.	St. James.	Far Cotton	St. Edmund.	Total cases removed to Hospital
Small-pox ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cholera ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diphtheria (including Membranous croup)	26	...	6	7	5	8	...	2	4	2	7	2	2	1	6	...	...	1	...	3	1	1	...	1	...	7
Erysipelas	118	1	1	12	20	67	17	16	13	15	10	20	10	11	5	18	...	...	...	...	...	...	...	...	...	...
Scarlet fever	731	4	216	447	48	16	...	119	55	87	39	84	97	114	64	72	73	40	56	28	64	58	64	20	48	451
Typhus fever ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric fever	33	...	...	4	13	16	...	6	5	1	6	9	1	3	...	2	1	3	1	...	9	...	...	...	...	14
Relapsing fever...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Continued fever ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Puerperal fever	10	...	...	...	4	6	...	2	1	1	1	3	2	...	...	...	...	...	...	...	...	...	...	...	...	...
Plague ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
TOTALS	918	5	223	470	90	113	17	145	78	106	63	118	112	129	75	92	74	44	57	31	74	59	64	21	48	472

NOTES.—The localities adopted for this Table are the same as those in Tables II. and IV.
State in space below the name of the isolation hospital, if any, to which residents in the district, suffering from infectious disease, are usually sent. Mark (H) the locality in which it is situated, or if not within the district, state where it is situated, and in what district. The name of the authority by whom the hospital is provided should also be given. Mark (W) the locality in which a workhouse is situated.
Isolation Hospitals—The Borough Hospitals—(1) Harborough Road. (2) Welford Road. (3) near Hardingstone (Smallpox). Total available beds—100. Number of Diseases that can be concurrently treated—4.

I. Institutions within the District receiving sick and infirm persons from outside the District.	II. Institutions outside the District receiving sick and infirm persons from the District.	III. Other Institutions, the deaths in which have been distributed among the several Localities in the District.
<p>The Northampton General Hospital.</p> <p>The Northampton Workhouse.</p> <p>St. Andrew's Hospital for the Insane.</p>	<p>The Northampton Borough Hospital for Infectious Diseases.</p> <p>The Northampton Borough Hospital for Smallpox.</p> <p>The Asylum, Berry Wood.</p>	
Is the Union Workhouse within the District? Yes.		

TABLE
COUNTY BOROUGH
Causes of, and Ages at,

CAUSES OF DEATH.					Deaths at the subjoined ages of "Residents" whether occurring in or beyond the district.						
					ALL AGES.	Under 1 year.	1 and under 5	5 and under 15	15 and under 25	25 and under 65	65 and upwards.
					2	3	4	5	6	7	8
Small-pox ...	...	...	...	...	...	...	...	...	...	...	...
Measles ...	...	...	...	...	3	...	2	1	...	...	...
Scarlet Fever ...	...	...	...	...	5	...	...	5	...	...	...
Whooping-cough ...	...	...	...	...	28	11	17	...	...	...	...
Diphtheria (inc. Membranous croup)...	...	...	...	...	4	...	3	...	1	...	...
Croup ...	...	...	...	...	...	...	...	...	...	...	...
Fever } Typhus ...	...	...	...	...	...	...	...	...	...	...	...
Enteric ...	...	...	...	...	5	...	...	...	3	2	...
Other continued ...	...	...	...	...	...	...	...	...	...	...	...
Epidemic Influenza ...	...	...	...	...	20	...	...	1	2	9	8
Cholera ...	...	...	...	...	...	...	...	...	...	...	...
Plague ...	...	...	...	...	...	...	...	...	...	...	...
Diarrhœa. (See notes, Page 96.) ...	...	...	...	...	28	20	5	...	...	1	2
Enteritis ...	...	...	...	...	6	1	3	...	...	2	...
Puerperal fever ...	...	...	...	...	5	...	...	...	1	4	...
Erysipelas ...	...	...	...	...	3	...	...	...	...	3	...
Phthisis (Pulmonary Tuberculosis) ...	...	...	...	...	104	...	...	3	32	68	1
Other tuberculous diseases ...	...	...	...	...	23	1	7	4	4	7	...
Cancer, malignant disease. (See notes) ...	...	...	...	...	93	...	...	...	1	62	30
Bronchitis ...	...	...	...	...	113	30	11	...	1	24	47
Pneumonia ...	...	...	...	...	49	18	16	...	3	8	4
Pleurisy ...	...	...	...	...	1	...	...	...	...	1	...
Other diseases of Respiratory organs ...	...	...	...	...	12	4	1	1	...	3	3
Alcoholism ...	...	...	...	...	20	...	...	...	...	14	6
Cirrhosis of liver ...	...	...	...	...	...	...	...	...	...	...	...
Venereal Diseases ...	...	...	...	...	2	...	...	...	...	2	...
Premature birth ...	...	...	...	...	37	37	...	...	...	...	...
Diseases and accidents of parturition ...	...	...	...	...	5	...	...	...	2	3	...
Heart diseases ...	...	...	...	...	104	2	2	4	5	41	50
Accidents ...	...	...	...	...	22	...	1	1	2	12	6
Suicides ...	...	...	...	...	9	...	...	...	2	6	1
Other septic diseases ...	...	...	...	...	11	...	...	1	1	9	...
Brain and Nervous ...	...	...	...	...	39	2	2	2	...	21	12
Apoplexy and Hemiplegia ...	...	...	...	...	80	...	1	...	1	35	43
Meningitis ...	...	...	...	...	16	3	6	6	...	1	...
Kidney and Urinary ...	...	...	...	...	32	...	...	1	1	22	8
Diabetes ...	...	...	...	...	14	...	...	1	...	10	3
Senile decay ...	...	...	...	...	102	...	...	...	...	1	101
Marasmus ...	...	...	...	...	34	32	...	...	...	1	1
Convulsions ...	...	...	...	...	20	17	3	...	...	...	...
All other causes ...	...	...	...	...	82	20	4	8	3	27	20
ALL CAUSES ...	...	...	...	...	1131	198	84	39	65	399	346

(See Notes,

IV.

OF NORTHAMPTON.

Death during Year 1908.

Deaths at all ages of "Residents" belonging to Localities, whether occurring in or beyond the District.									Total Deaths whether of Residents or Non- Residents in Public Institutions in the District.
St. Michael.	Castle.	St. Crispin.	South.	North.	Kings- thorpe.	St. James.	Far Cotton.	St. Edmund	
9	10	11	12	13	14	15	16	17	18
...
...	...	I	...	...	2	...	...	...	...
I	I	I	...	I	...	I	...	...	...
4	3	I	2	6	3	5	I	3	I
...	I	I	2	...	...	...	...	...	2
...
...
I	I	...	I	I	...	...	...	I	I
...
I	I	5	4	2	2	I	...	4	I
...
...
I	5	2	4	10	I	I	2	2	I
I	I	...	...	I	I	I	...	I	I
2	...	I	...	...	2	...	...	...	...
...	...	I	...	I	...	...	...	I	I
22	13	19	7	12	8	6	3	14	10
4	4	3	I	4	5	...	...	2	8
18	11	13	8	13	13	4	6	7	29
17	14	14	8	24	5	9	6	16	9
5	5	6	8	10	4	4	2	5	2
I	...	...	...	...	...	...	...	...	...
6	2	I	...	I	I	...	...	I	I
I	3	3	5	I	I	2	I	3	5
...	...	...	...	I	...	I	...	...	I
6	2	6	7	5	4	4	2	I	4
I	I	I	...	...	I	I	...	...	I
21	10	10	8	13	11	10	6	15	21
4	2	I	4	2	2	6	...	I	26
2	I	...	4	...	I	...	I	...	3
I	...	I	2	...	I	3	I	2	9
7	7	7	2	5	I	4	2	4	12
20	8	9	6	12	7	5	7	6	19
I	2	6	I	3	2	I	...	...	3
7	3	4	3	3	2	3	2	5	15
3	3	I	2	...	I	I	I	2	3
27	15	18	5	14	6	8	2	7	36
I	6	3	3	7	3	4	4	3	I
...	3	6	2	3	...	4	...	2	I
5	9	12	10	13	6	13	5	9	27
191	137	157	109	168	96	102	54	117	254

TABLE
COUNTY BOROUGH

INFANTILE MORTALITY
Deaths from stated Causes in Weeks

CAUSE OF DEATH.						Under 1 week.	1-2 weeks.	2-3 weeks.	3-4 weeks.	TOTAL UNDER 1 MONTH.
ALL CAUSES	Certified	...	...	...	...	30	14	14	6	64
	Uncertified	...	...	...	...	9	1	..	..	10
I. COMMON INFECTIOUS DISEASES	Small-pox	...	...	...	...	..	..	..	..	..
	Chicken-pox	...	...	...	...	..	..	..	..	..
	Measles	...	...	...	...	..	..	..	..	..
	Scarlet Fever	...	...	...	...	..	..	..	..	..
	Diphtheria (inc. Membranous croup)	...	...	...	...	..	..	..	..	..
II. DIARRHŒAL DISEASES.*	Whooping Cough	...	...	...	...	..	..	..	..	..
	Diarrhœa, all forms	...	...	...	...	..	..	1	..	1
	Enteritis, Muco-enteritis, Gastro-enteritis	...	...	...	...	..	..	..	..	..
	Gastritis, Gastro-intestinal Catarrh	...	...	...	...	..	..	..	..	..
	Premature Birth	...	...	...	...	21	6	3	2	32
III. WASTING DISEASES	Congenital Defects*	...	...	...	...	11	4	1	1	17
	Injury at Birth	...	...	...	...	..	..	..	..	..
	Want of Breast-milk, Starvation	...	...	...	...	..	..	..	..	..
	Atrophy, Debility, Marasmus	...	...	...	...	1	..	4	3	8
IV. TUBERCULOUS DISEASES	Tuberculous Meningitis*	...	...	...	...	..	..	..	..	..
	Tuberculous Peritonitis: Tabes Mesenterica	...	...	...	...	..	..	..	..	..
	Other Tuberculous Diseases*	...	...	...	...	..	..	..	..	..
	Erysipelas	...	...	...	...	..	..	..	..	..
	Syphilis	...	...	...	...	..	..	..	..	..
V. OTHER CAUSES	Rickets	...	...	...	...	..	..	..	..	..
	Meningitis (<i>not tuberculous</i>)	...	...	...	...	..	..	..	..	..
	Convulsions	...	...	...	...	2	3	..	..	5
	Bronchitis	...	...	...	...	1	..	3	..	4
	Laryngitis	...	...	...	...	..	..	..	..	..
	Pneumonia	...	...	...	...	..	..	1	..	1
	Suffocation, overlying	...	...	...	...	..	..	..	..	..
Other causes						3	2	1	..	6
						39	15	14	6	74

*See Notes to Table IV., page 96.

DURING THE YEAR 1908.

and Months under One Year of Age.

District of Northampton.

Population, estimated to middle of 1908, 93,760

Births in the year { legitimate—1,964.
 { illegitimate—79.

Deaths from all Causes at all Ages, 1,131.

Deaths in the year of	<div> <div>legitimate infants</div> <div>illgitimate infants</div> </div>	<div>No</div> <div>information</div> <div>available.</div>
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NOTES TO TABLES IV. and V.

- (a) In Table IV., all deaths of "Residents" occurring in public institutions, whether within or without the district, are to be *included* with the other deaths in the columns for the several age groups (columns 2-8). They are also, in columns 9-15, to be *included* among the deaths in their respective "Localities" according to the previous addresses of the deceased as given by the Registrars. Deaths of "Non-residents" occurring in public institutions in the district are in like manner to be *excluded* from columns 2-8 and 9-15 of Table IV.
- (b) See notes on Table I. as to the meaning of "Residents" and "Non-residents," and as to the "Public Institutions" to be taken into account for the purposes of these Tables. The "Localities" in Table IV. should be the same as those in Tables II. and III.
- (c) All deaths occurring in public institutions situated within the district, whether of "Residents" or of "Non-residents," are, in addition to being dealt with as in note (a), to be entered in the last column of Table IV. The total number in this column should equal the figures for the year in column 9, Table I.
- (d) The total deaths in the several "Localities" in columns 9-15 of Table IV. should equal those for the year in the same localities in Table II., sub-columns c. The total deaths at all ages in column 2 of Table IV. should equal the gross total of columns 9-15, and the figures for the year in column 12 of Table I.
- (e) Under the heading of "Diarrhœa" are to be included deaths registered as due to Epidemic diarrhœa, Epidemic enteritis, Infective enteritis, Zymotic enteritis, Summer diarrhœa, Dysentery and Dysenteric diarrhœa, Choleraic diarrhœa, Cholera and Cholera Nostras.
- Deaths from diarrhœa secondary to some other well-defined disease should be included under the latter.

Deaths from Enteritis, Muco-Enteritis, Gastro-Enteritis, and Gastritis (see under the heading Diarrhœal Diseases in Table V.) in Tables IV. and V. should be placed immediately below, but separately from, those enumerated under the heading Diarrhœa as defined by enumeration above.

This is particularly important for deaths under one year of age, as many of the deaths in infancy returned as due to Enteritis are really caused by Epidemic Diarrhœa. In the course of years, by the adoption of this recommendation, it will be practicable to ascertain the probable amount of transfer between these different headings.

- (f) Under the headings of "Cancer" and "Puerperal fever" should be included all registered deaths from causes comprised within these general terms. Thus: under "Cancer" should be included deaths from Cancer, Carcinoma, Malignant disease, Scirrhus, Epithelioma, Sarcoma, Villous tumour, and Papilloma of bladder, Rodent ulcer. Under "Puerperal Fever" are to be included deaths from Pyæmia Septicæmia, Sapræmia, Pelvic peritonitis, Peri- and Endo-Metritis occurring in the Puerperium.
- (g) Under "Congenital Defects" in Table V. are to be included deaths from Atelectasis, Icterus neonatorum, Navel hæmorrhage, Malformations and Congenital hydrocephalus.
- (h) Under "Tuberculous Meningitis" are to be included deaths from Acute hydrocephalus.
- (i) Under "Other Tuberculous Diseases" are to be included deaths from Tuberculosis, Tuberculosis of bones, joints and other organs, Lupus and Scrofula.
- (j) All deaths certified by registered Medical Practitioners and all Inquest cases are to be classed as "Certified"; all other deaths are to be regarded Uncertified."

In recording the facts under the various headings of Tables I., II., III., IV., and V., attention has been given to the notes on the Tables.

J. DOIG McCRINDLE,

Medical Officer of Health.

April 17th 1909

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